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The Policy Influence of Sustainability Indicators: Examining Use and Influence of Indicators in German Sustainability Policy Making

KAJSA BORGNÄS

In 2002 Germany adopted an ambitious national sustainability strategy, covering all three sustainability spheres and circling around 21 key indicators. The strategy stands out because of its relative stability over five consecutive government constellations, its high status and increasingly coercive nature. This article analyses the strategy's role in the policy process, focusing on the use and influence of indicators as a central steering tool. Contrasting rationalist and constructivist perspectives on the role of knowledge in policy, two factors, namely the level of consensus about policy goals and the institutional setting of the indicators, are found to explain differences in use and influence both across indicators and over time. Moreover, the study argues that the indicators have been part of a continuous process of 'structuring' in which conceptual and instrumental use together help structure the sustainability challenge in such a way that it becomes more manageable for government policy.

INTRODUCTION

The German government decided on 17 April 2002 on a national flagship sustainability strategy, called 'Perspectives for Germany'.¹ The strategy encompasses economic, social and environmental sustainability goals; it should run through all government policy; and via a management concept, including 21 key indicators, should help: (1) put sustainability issues on the policy agenda, and (2) influence government action. The strategy stands out both among German policy strategies as well as in an international perspective because of its high formal status, its relative stability over five consecutive government constellations and its increasingly coercive nature.

In the broader academic and policy debate on how to govern sustainable development, much focus has been directed towards the central role of sustainability indicators (SI). SI are commonly viewed as key instruments for defining and managing complex human–environmental systems.² It is assumed that indicators help support policy making in a variety of ways, including through monitoring, communication, evaluation, agenda-setting and learning; indicators may be applied at any stage of the policy process as well as helping with either 'opening up' or 'closing' a debate.³ Importantly, whereas earlier SI debates tended to view indicators mainly as statistical representations of objective knowledge, there has lately been a 'constructivist turn' in

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indicator research, meaning that indicators are increasingly viewed as instruments incorporating aspects of both knowledge and policy,⁴ serving as tools for knowledge–policy ‘co-production’.⁵ To study this dual role of indicators, Gudmundsson *et al.* proposed a conceptual framework differentiating among instrumental, conceptual and symbolic use and influence.⁶ Lyytimäki *et al.* have recently developed a typology of indicator use, non-use and misuse.⁷ Notwithstanding this growing literature scrutinising the policy role of SI, research remains divided both over questions on how indicators influence policy and on whether indicators exert any policy influence at all.

Research on German climate and energy policy abound. In particular, there is an ample body of literature examining the *Energiewende* and the energy system transformation.⁸ There is also literature on broader sustainability policies, including on the national sustainability strategy. For instance, Tils⁹ examined the preparation and early implementation phase of the strategy and Schlör *et al.* analysed the degree to which the strategy has contributed to greening the energy sector.¹⁰ However, although the indicator set is often a part of strategy evaluations, few studies have hitherto focused on assessing the role of sustainability indicators in the policy process more specifically. A notable exception is Leukhardt and Allen’s critical examination of the environmental dimensions covered by the strategy’s indicator set.¹¹ Nonetheless, we still lack a thorough understanding of the practical impacts of the sustainability strategy on policy in general, as well as insights into what role SI play in German sustainability policy processes more specifically.

Taking stock with the growing debate on SI as key governance instruments, as well as the central role of indicators as tools for *operationalising* sustainable development in the German case, the present study asks what role sustainability indicators play in German sustainability policy processes. Conceptually, the study contrasts rationalist and constructivist perspectives on indicators as knowledge–policy tools. To distinguish between different forms of use and influence, the categories of instrumental, conceptual and symbolic use and influence are applied. Additionally, the study asks what factors may account for differences in indicator use and influence, both across indicators and across time. In this endeavour, indicator factors, user factors and context factors are explored. In terms of policy stages, the present study scrutinises how indicators affect the policy *process* rather than examining their effects on outputs or impacts. This means that *practices* (including interpretations and motivations) are at the locus of analysis, rather than legislative or regulatory change.

The study finds that the indicators have gone from primarily filling a conceptual role to exerting a relatively high degree of instrumental influence. However, there are important differences among indicators. These differences both across indicators and over time are explained primarily by differences in stakeholder consensus about underlying policy goals and the institutional setting of the indicators. Moreover, it is argued that conceptual and instrumental use are closely intertwined: as a primary objective of indicators is to summarise and condense knowledge and policy priorities, they help policy makers structure the sustainability challenge in such a way that it becomes more manageable for government policy.

In terms of method and data, the study relies on qualitative content analysis of relevant policy documents (strategy documents, indicator reports, peer reviews and parliamentary minutes) and semi-structured interviews. Twelve key informants involved

in German sustainability politics were interviewed between February and June 2015. They represented three different groups: politicians who were members of the German Bundestag; senior civil servants working closely with the sustainability strategy; and people having a consultative function as representatives for non-governmental organisations (NGOs) or in the Council. The politicians (five) represented both government (CDU/CSU and SPD) and opposition (Bündnis 90/Die Grünen and Die Linke) parties, and were either on the Committee on the Environment, Nature Conservation, Building and Nuclear Safety, in the Parliamentary Advisory Body and/or were members of the Enquete Commission 'Growth, Well-Being and Quality of Life' (2011–13). The senior civil servants (five) represented the Ministry of Labour and Social Affairs, the Ministry of Environment, Nature Conservation, Building and Nuclear Safety (representing two different issue areas), the Federal Chancellery and the Statistical Office. The interviewees were selected to represent both environmentally related and non-related issue-areas as well as different levels and responsibilities concerning sustainability policy within the overall government. The interviewees from the Council and the environmental NGO were selected to provide outside perspectives on the government's sustainability work. Similar questions about the interviewees' opinions on the use and influence of the strategy and indicators in the policy process, and the factors affecting different forms of use and influence, were posed to all interviewees. The interviews were recorded and transcribed. The answers were grouped according to two main criteria: how the indicators have been used in policy making, and what explains the different roles of indicators. In the analysis, whereas document analysis was the dominant method for unfolding the development trajectory of the strategy and assessing the different roles of indicators, interviewee data were particularly important for assessing what factors account for the various forms of influence and use.

The article is organised as follows: in the next section the analytical framework is presented. Then the evolutionary history of the strategy and the use and influence of indicators is traced to clarify the role of indicators in different phases of strategy development. Thereafter, the process is analysed in light of what factors may explain different forms and degrees of indicator influence and use. Finally, the main findings are discussed.

SUSTAINABILITY INDICATORS AND THE POLICY PROCESS

Instrumental, Conceptual and Symbolic Use and Influence

The debate on the role of (scientific) knowledge in policy dates back to the end of World War II when researchers began to complain that decision makers were not using research results in a direct way for policy decisions. The common expectation was that knowledge would be used instrumentally, that the link between knowledge and policy was uni-directional and that high quality knowledge was necessary both for governing specific policy problems as well as for solving political controversy.¹² The underlying assumption was of a rational decision making process: a view that is sometimes called the 'problem-solving model'.¹³ In the 1970s and 1980s this rationalist-positivist view on knowledge utilisation was challenged by more constructivist

strands of thought. Knowledge was increasingly conceptualised as a tool for enlightenment and/or for legitimising and sustaining predetermined policy positions.¹⁴ It was highlighted that actors often use knowledge in a diffuse and indirect way. Sheila Jasanoff argued that knowledge and policy are ‘co-produced’, meaning that knowledge utilisation is not just a matter of the quality of the knowledge as such, but a question of which knowledge fits with the institutional context and dominant power structures.¹⁵ Just as knowledge supports and justifies certain policy, policy can produce and stabilise certain knowledge. This view was based on an assumption of the policy process as being more anarchic and unpredictable, something Cohen *et al.* had famously termed the ‘garbage can model’.¹⁶

In the indicator literature, most early indicator debates were safely situated within notions of ‘sound science’, adopting a rationalist-positivist view of knowledge–policy interrelations and viewing indicators as neutral objects representing pre-existing facts about the world-out-there. Later indicator debates instead conceptualise indicators as ‘boundary objects’¹⁷ between knowledge and policy, serving both ‘neutrality’ and ‘advocacy’ strategies in the policy debate.¹⁸ Recent research has come to focus on the policy role of indicators and on how indicators help support decision making by ‘matching’ policy goals (knowledge) with governance measures in different ways. A main discussion in the field is centred on the concepts of instrumental, conceptual and symbolic use and influence.¹⁹ Instrumental use entails the direct influence of indicators on policy developments or direct use for specific policy purposes. Conceptual use highlights the ‘enlightenment role’ indicators might play in providing a common knowledge base or establishing shared frameworks. Symbolic use entails using indicators to justify or legitimise pre-existing policy positions, or simply to avoid using the indicator at all. The notion of ‘imposed use’ was introduced by Weiss *et al.* to describe the mandatory use of evaluation in policy.²⁰

Although these categories can be expected to be complementary rather than contradictory, few empirical studies have found more than limited degrees of instrumental use and influence. Instead, conceptual and symbolic use seem to be the dominating strategies. For instance, examining the role of indicators in Finnish politics, Rosenström²¹ found no or limited degrees of instrumental influence, but evidence of conceptual and symbolic use. Similar results were found by Sébastien *et al.* in studies of the use of SI in the EU and the UK energy sector.²² Conceptual rather than instrumental use was also detected by Gudmundsson and Sorensen²³ with regard to the Swedish transport sector, as well as by Gudmundsson concerning EU transport policy.²⁴ Focusing on the role of SI as tools for bringing different stakeholder views together, Garnåsjordet *et al.* revealed how the conceptual use of indicators helps structure the process of policy learning.²⁵

The present study focuses on the interplay between the instrumental, conceptual and symbolic use and influence of indicators. In terms of operationalisation, instrumental use is said to occur when an indicator can be coupled with concrete legislative or regulatory processes, closely related to the production of policy outputs. Conceptual use is assessed by examining the extent to which the indicators are part of knowledge formation, or of the ‘opening up’ or ‘closing’ of a debate on policy priorities. Symbolic use is identified when an indicator is primarily used for motivating existing policy positions or when there are clear instances of non-use or misuse. Moreover, the study

distinguishes between imposed and voluntary use: imposed use is said to occur when the use is mandatory and top-down, rather than voluntary on behalf of individual policy actors. Last, although use and influence are essentially two very different aspects of the role of knowledge in policy, they have been found to be difficult to disentangle empirically. In line with most indicator research therefore, this study treats use and influence mostly as one concept.

Explanatory Factors

For explaining different forms and degrees of indicator use and influence, three (partly overlapping) groups of factors figure prominently in the literature.

1. *Indicator factors* emphasise the quality of the indicators themselves. Based within the rationalist-positivist paradigm, the assumption is that policy makers and others react when indicators show a value above a given threshold. Methodologically rigorous indicators, meaning indicators that comply with scientific standards of construction, are based on reliable and readily available data, are produced timely and are easily interpretable, are considered more transparent and thereby facilitate accountability control by multiple stakeholders.²⁶ Haas noted that issues of policy relevance and applicability are also important features.²⁷ This means that indicators that are clearly connected with concrete policy problems or are coupled with particular policy tools are more usable than indicators that are only loosely coupled with particular problems or tools.
2. *User factors* highlight that the interests of policy actors matter. Beyond the explicit design and purposes of indicators, stakeholders have their own motivation, information and power concerning both the content and the correct way of using indicators. This means that actor constellations and partisan coalitions matter for their use and influence. Moreover, constructivist theories emphasise that broad stakeholder consensus is a prerequisite for stable and effective long-term policy deals. It follows that indicators reflecting the views of rather homogeneous 'epistemic communities'²⁸ and complying with dominant 'belief systems'²⁹ can be expected to be more influential than indicators reflecting controversial issues or views.
3. *Context factors* entail that the position of the indicator in the social-political opportunity structure matters. This also links with constructivist (and institutional) theories which assume that institutional and administrative frameworks constrain the role of knowledge in policy. Indicators that 'fit' with the legislative process, meaning indicators that do not contradict established institutions, and are coupled with personal, institutional and financial resources, are more likely to exert an influence.³⁰ Turnhout *et al.* suggested that the role of knowledge in policy is dependent upon the problem structure itself:³¹ indicators reflecting problems with a 'simpler' problem structure have a higher degree of instrumental influence than indicators whose underlying problem structure is more 'mixed'.

Applying this framework to the analysis of the role of indicators in German sustainability policy, the focus is on whether and how indicator, user and context factors help explain different forms and degrees of use and influence. Rather than viewing the categories as mutually exclusive, they are viewed as potentially complementary and the

TABLE 1
RESEARCH FRAMEWORK FOR ANALYSING INDICATOR INFLUENCE AND USE

	<i>Instrumental</i>	<i>Conceptual</i>	<i>Symbolic</i>
<i>Indicator factors</i>	The constitution of the indicator affects its role in the policy process	The constitution of the indicator affects its role in shaping the understanding of a policy problem	The constitution of the indicator affects the degree to which it is non-used or misused
<i>User factors</i>	Actors shape the role of the indicator in the policy process	Actors shape the role of indicators in creating understanding of a policy problem	Actors affect the degree to which the indicator is non-used or misused
<i>Context factors</i>	The 'contextual fit' of the indicator affects its role in the policy process	The 'contextual fit' of the indicator affects how it helps shape the understanding of a policy problem	The 'contextual fit' of the indicator affects the degree to which it is non-used or misused

emphasis is put on identifying which factors are more or less dominant in explaining different types of influence and use. Table 1 summarises the research framework.

In the following section, the history of the German sustainability strategy is traced and examined. The process is divided in three subsequent 'phases', highlighting how it has evolved over time.

THREE PHASES OF STRATEGY DEVELOPMENT

Phase One (1992–2002): Goal Establishment and Indicator Definition

The development of a national German sustainability strategy was first initiated right after the signing of the Agenda 21 at the UN Conference on Environment and Development in Rio de Janeiro in 1992. The signatory states agreed to develop national strategies combining economic performance, social equality and ecological sustainability.³² Between 1996 and 2000, Germany took part in a UN test phase for sustainability indicators. In line with the recommendations from the Agenda 21, the government organised a broad consultation process with scientists, local government and Länder-level politicians, business and union representatives, churches, environmental and consumer protection groups and civil society. An important inspiration was the Enquete Commission 'Protection of Man and the Environment' which in 1998 called for the establishment of a sustainability council and interdepartmental coordination of the sustainability work.³³ The final strategy, presented in 2002, consisted of four cross-sectoral conceptual cornerstones: (1) Intergenerational equity; (2) Quality of life; (3) Social cohesion; and (4) International responsibility. Prioritised policy areas were energy and climate, mobility, nutrition, education, demographic change and economic innovation. It was emphasised that the strategy should not be any abstract idea or vision, but a concretely measurable and instrumentally useful steering instrument. To this end, a catalogue of monitoring and evaluation tools – a management concept – of which the indicator set was the central part, was supplemented to the overall strategy. A State Secretaries' Committee on Sustainable Development, based within the Federal Chancellery and in which all ministries were

to participate, was made responsible for monitoring, implementing and further developing the strategy. A Bund–Länder committee was set up to facilitate vertical integration. And a special Sustainable Development Council with 15 representatives from civil society was appointed in 2001 to advise the federal government on sustainability matters, contribute to the broader implementation of the strategy and initiate public debate.³⁴

The sustainability strategy was thereby an important attempt by the federal government to define a normative quantitative sustainability order for Germany.³⁵ Germany had already taken significant steps towards regulation for renewable energies, climate protection and green tax policies (notably an ecological tax reform introduced in the late 1990s and a climate protection programme initiated in 2000), but the Agenda 21 had made it clear that a more unified approach to sustainable development governance was needed. By developing and selecting 21 indicators from a broad palette of hundreds of suggestions, the government had settled on a problem definition from which to approach the challenge of sustainability in a more cohesive way. It was recognised that a sustainability strategy, in order to be legitimate and effective, would have to include the perspectives of many stakeholders. The final report therefore contained special sections defining the different sustainability understandings and responsibilities of different stakeholder groups.³⁶ The final goals and indicator set, however, were a carefully balanced summary of the main stakeholder positions. The particular role of indicators in this initial phase was that of facilitating and broadening the debate, identifying stakeholder positions, putting issues on the agenda, and – a little later – focusing the discussions into a quantitative definition of what constitutes sustainable development. Moreover, it was emphasised that not all goals were attainable through federal government policy only, but that cooperation between different government levels or public and private sector actors was needed.³⁷

An important aspect which was emphasised was that potential goal conflicts among sustainability areas should be acknowledged.³⁸ Experts had warned that too much integration between sustainability fields would mask goal conflicts, and instead of attempting to solve them once and for all, the strategy should serve as a tool to help identify and balance them. Despite this, the pronounced focus on energy efficiency and renewable energies as a way to create ‘win–win’ policy options was criticised by several stakeholders. Critics also argued that describing the three sustainability areas as if they develop in parallel, rather than considering nature as a boundary to economic and social developments, would give a false impression of harmony among the different sustainability dimensions.³⁹

In terms of instrumental, conceptual and symbolic use and influence of indicators, it seems that the establishment phase was mainly a phase of conceptual work and ‘opening up’ of the debate. The government aimed at developing a common framework for what sustainability means for an industrialised, developed country like Germany. The question of what tools were necessary for implementing the strategy was rather absent from the initial debate. It was only after the presentation of the report to the UN in 2002 that it became clear that more concrete monitoring and steering tools were necessary.⁴⁰ Interestingly, however, it was noted that instrumental and conceptual use were to be complementary strategies for dealing with different goals and indicators. As the government enjoyed limited regulatory competence in some

policy fields conceptual debates could help create legitimacy around the strategy's goals among stakeholders, whose cooperation was necessary for implementation.⁴¹

Phase Two (2002–08): Strengthening of the Strategy's Instrumental Role

Soon after the presentation in 2002, there was an ambition to increase the knowledge about and implementation of the strategy both inside and outside of government. Between the adoption in 2002 and the publication of the first progress report in 2004, several ministries organised conferences and seminars on 'their' sustainability aspects. In 2004, a Parliamentary Advisory Body on Sustainable Development was constituted, with a limited responsibility to support and check the ministerial sustainability work.⁴² In the preparations both of the progress report in 2004 and in 2008, broad consultation rounds were again organised. Thematically, the 2004 report continued putting the focus on renewable energies, emissions reduction and consumer protection, with an enhanced emphasis on international responsibilities and trade. Quantitative goals were assigned to some of those indicators that had previously not had any. Other indicators, such as the biodiversity indicator, were given new definitions.⁴³ The Council supplemented its own chapter to the 2004 report, complaining that Germany was *not* on a good way towards sustainable development. It was criticised that the strategy and the concept of sustainable development were only known and relevant within a small group of experts, and not broadly among stakeholders and civil society.⁴⁴ Similar critiques were given by an independent peer review conducted between 2007 and 2009, who complained that strategy implementation during the first years was marked by 'silos and separated action', and that the strategy was 'not yet operational enough'.⁴⁵ All in all, there is limited evidence of instrumental use and influence during the initial years. Instead, the practice of binding stakeholders into broad consultation processes, using the sustainability goals and indicators as a basis for conferences, seminars and other conceptual work, seems to have been the dominant strategy. This type of conceptual work also became increasingly institutionalised during the period.

In preparation for the 2008 progress report, a more thorough evaluation and re-definition of the strategy was conducted. An Interdepartmental Working Group with a particular responsibility for the monitoring and updating of indicators together with the Statistical Office reviewed the overall indicator set. Although the policy goals were left unchanged, some changes and re-definitions were made to the indicators. A sustainable consumption indicator was proposed but not adopted as consensus could not be reached over measurements and definitions.⁴⁶

The most significant change in the 2008 progress report, however, was that the formal role of the strategy in legislative and regulatory processes was strengthened considerably. Both the Council and the Parliamentary Body had proposed such strengthening and complained about the limited degree of obligation attached to the strategy, as well as too little institutional and personal support.⁴⁷ As a result, the role of the State Secretaries' Committee was strengthened: the frequency of meetings should be increased; cross-ministerial sustainability projects were to be initiated; individual ministries were required to submit regular progress reports, and representatives from ministries, the expert community and civil society were to be more regularly invited. Most importantly, sustainability became a part of the 'regulatory impact

assessment', a scrutiny procedure which obliged ministries to assess and motivate any proposed law or decree with regard to the goals of sustainability. A corresponding amendment to the 'Joint Rules of Procedure of the Federal Ministries' (GGO) stated that: '[I]t must be shown whether the impact of the draft legislation is consistent with sustainable development, and in particular what will be its long-term impact.'⁴⁸ The Parliamentary Body was granted a more significant formal role in checking each of the federal government's draft legislations and decrees for statements related to sustainability. Proposals that failed these checks were supposed to be sent back to the responsible ministry or committee for re-work or re-motivation.⁴⁹

The 2008 progress report therefore meant a significant increase in the formal steering function of the strategy, albeit primarily in a 'reactive' way. Although such formal strengthening does not necessarily mean that voluntary instrumental use increases, it ensures at least a minimum degree of 'imposed instrumental use'. By formally requiring new legislation to be sensitive to broader aspects of sustainability, a loop of re-thinking and re-considering of consequences and alternatives is (at least partly) forced into the legislative process. This implies both a strengthening and a 'coupling' of conceptual and instrumental use. Moreover, although the final decision on what legislation to propose or how to justify proposals remained in the hands of individual policy actors, the manoeuvring room for only symbolic use was considerably reduced.

Phase Three (2008–15): Shift in Focus and Enhanced Instrumental Use and Influence

Did the formal strengthening of the instrumental aspects of the strategy have a concrete policy effect? There are positive signs that it did. The frequency and regularity of meetings of the State Secretaries' Committee increased after 2008, and the ministries reported to the Committee according to a pre-set schedule.⁵⁰ In 2010, the Committee adopted a new strategy for sustainable public procurement.⁵¹ Concerning the scrutiny procedure, the Parliamentary Body in July 2011 presented an evaluation covering the period between 1 March 2010 and 10 June 2011. During this period, the Body had evaluated 192 legislative bills and decrees where sustainability was a relevant factor. Seventy-seven per cent of the proposals had contained statements on sustainable development, of which 73 per cent were deemed plausible and acceptable, meaning an overall acceptability rate of 56 per cent.⁵² The Body drew the conclusion that although the ministerial impact assessments needed improvement, the federal government was on the whole on the right track as far as the scrutiny procedure was concerned.⁵³

In preparation for the 2012 progress report, the indicators and goals went through another round of consultation and evaluation. Thematically, increased emphasis was put on economic and financial issues rather than social and ecological sustainability. Two new indicators of sustainability in public finances were introduced. A financial market stability indicator and a water indicator were proposed, but rejected. The work on a sustainable consumption indicator was reported but did not lead to the adoption of a new indicator. It was noted that although the instrumental role of the strategy had increased, additional efforts were needed to improve the linkage between the indicators and goals with the drafting of laws and regulation in the future.⁵⁴

A second peer review report was published in 2013.⁵⁵ It stated that it was 'impressed' by the 'significant action' that had been taken to strengthen the strategy's instrumental role since 2009. It mentioned the *Energiewende*, new sustainable

procurement platforms, increased research spending and the establishment of a prestigious German Sustainable Award scheme as examples of practical policy effects. It pointed towards several new platforms for dialogue in relation to the Council and to Bund–Länder cooperation. The State Secretaries' Committee was deemed considerably strengthened, as was the scrutiny procedure. However, due primarily to complaints by parliamentarians about the persistent difficulties of mainstreaming sustainability into the ministerial processes, suggestions were made on how to reinforce the scrutiny procedure.⁵⁶ Between 2013 and 2015, such reinforcement was further debated, including at a public hearing in February 2015.⁵⁷

The conceptual debate on sustainability also gained some new momentum after 2010. Several of the political parties organised internal discussions on sustainability definitions and indicators: the CDU initiated a party dialogue on well-being in 2010⁵⁸ and the SPD organised several consultations and party workshops concerning sustainability measurements.⁵⁹ In May 2013, the final report of the Enquete Commission 'Growth, Well-Being and Quality of Life' was published.⁶⁰ Although the commission unanimously emphasised the need to complement gross domestic product (GDP) with new societal development indicators, strong disagreements in particular between government (CDU/CSU and FDP) and opposition (SPD, Bündnis 90/Die Grünen and die Linke) party representatives meant that the main report was supplemented with special chapters authored by the opposition and selected experts. These chapters outlined the diverging views concerning the nature of the sustainability challenge, the relation between economic growth and sustainability and the degree of radical policy change needed. Moreover, rather than suggesting a new single counterpoint to GDP, the commission proposed an index consisting of 10 indicators. This was criticised as too complex and too vague by both the Green Party⁶¹ and several external reviewers.⁶²

The preparatory process leading up to the UN summit for the adoption of the post-2015 development goals (SDG) in September 2015 also meant that the public and the internal government debates on definitions of sustainable development were reinforced. For instance, the government took part in a UN preparatory Open Working Group on the formulation of the SDG in 2012.⁶³ The government also organised conferences on the formulation and implementation of the SDG, such as a civil society dialogue forum in June 2013 (*Gemeinsam die Zukunft gestalten: Die post-2015 Agenda – Dialog mit der Zivilgesellschaft*) and a high-level 'Flagship Forum' in May 2014 (*Globale Partnerschaft und die Post-2015-Agenda für nachhaltige Entwicklung*).⁶⁴ During autumn 2015 a new consultation round concerning the sustainability strategy started, and the Council launched a preparatory process to translate the recommendations from the Enquete Commission and the post-2015 development goals into the next progress report, due in 2016.⁶⁵

Summing Up: Use and Influence of Sustainability Indicators

Analysing the impact of the sustainability strategy, goals and indicator set on German policy processes over time, it seems clear that the strategy has taken some important steps towards formal and factual institutionalisation, in terms both of conceptual and instrumental use and influence. The conceptual role vis-à-vis stakeholders inside and outside of government, aiming at information exchange, increased knowledge and

encouraging the active participation of civil society, has become a rather regular feature both in the preparation of the progress reports every four years and in regular ministerial work. Several new discussion arenas for sustainability have been created: inter-ministerial arenas such as the State Secretaries' Committee and the Inter-departmental Working Group; intra-ministerial arenas, such as the appointment of responsible persons or creation of departmental offices for environmental issues and sustainable development in several of the ministries; as well as external arenas for dialogue between the federal government, the parliament and civil society, for example through the Council, the Parliamentary Body, recurring conferences and consultation rounds.⁶⁶ These all point towards a relatively high and increasing degree of conceptual use and influence of the strategy and indicators in the policy process.

Although it is much easier to find evidence of conceptual rather than instrumental use and influence, the formal strengthening of the instrumental role of the strategy also seems to have had some practical effects. Ministries report to the State Secretaries' Committee about their assigned goals and indicators; ministries re-work or re-motivate their proposals when the Parliamentary Body requires them to; and there seem to be at least some cases where the strategy has led the government to initiate work on particular sustainability legislation or strategies. Although it is not possible to conclude that the voluntary instrumental use has increased, and although much work remains in order to further strengthen the instrumental role of the strategy, it seems at least as if the actual instrumental use has increased over time.

It should be noted, however, that the use and influence differ among policy fields and that the strengthening of the formal instrumental role has had a larger effect on some goals and indicators than others. This points to the persistent importance of symbolic use, whereby the strategy itself encompasses all relevant sustainability goals but the final decision over which goals and indicators will exert an actual influence remains in the hands of individual policy actors. However, while this is undoubtedly the case, both the peer review reports and the progress reports have noted improvements in the implementation of the strategy, which implies that the overall manoeuvring room for only symbolic use has been reduced. Moreover, it may be argued that different forms of use and influence can (to a degree) be expected within a strategy of conflicting policy goals. Indeed, conflicting goals and indicators cannot be equally instrumentally influential at the same time, or it would lead to a regulatory stand-still.

The next section analyses the degree to which differences in indicator use and influence can be explained by indicator factors, user factors and context factors. The analysis is based to a large extent on the opinions expressed by interviewees.

FACTORS AFFECTING THE USE AND INFLUENCE OF INDICATORS

Indicator Factors

Most indicators in the set comply with scientific methodological standards of construction. Indeed, indicators are only included if they meet basic requirements of data availability and timeliness of data. One of the main strengths stated in the reports, as well as noted by several interviewees when asked about strengths and weaknesses of the indicator set, is the relatively limited number of indicators. A limited number ensures

comprehensibility and transparency, in turn facilitating multiple stakeholders to inform themselves about the goals, learn how to interpret and apply them and hold policy makers accountable – limiting the scope for symbolic use.

Asked about what features constitute a ‘useful’ indicator, interviewees mentioned various aspects of ‘measurability’. Three of the civil servant interviewees, including one from the Statistical Office, specified that indicators should ideally be based upon a clear and undisputed definition. A civil servant working in the environmental ministry mentioned that in the cases of the biodiversity and land use indicators, there has been a prolonged debate within and between ministries about the correct definitions and data that have complicated the translation of the goals and indicators into policy. Among the politicians, more emphasis was put on political aspects. A majority of the politician interviewees thought that environmental and social indicators are generally more disputed and that economic indicators – such as the GDP indicator – are more technically easy to define and measure. However, the use of the GDP indicator as an assessment of welfare and wealth was criticised by most interviewees, in particular opposition party MPs as well as the Council and NGO representatives. This implies that measurability is also connected with more general political conflicts over the definition of a problem and the choice of data sources rather than being a purely technical question.

When asked whether they thought it clear how the indicators should be used, the answers varied. Some interviewees noted that indicators are explicitly linked with policy tools to varying degrees. One government party MP commented that whereas the government debt indicator is a sort of output indicator in itself, meaning that there is little room for dispute over the correct interpretation for policy, issues such as reducing the gender pay gap, biodiversity or diminishing the proportion of the population suffering from obesity are more open for dispute over policy responsibilities and tools. Another MP, from another government party noted, however, that not only those indicators that are methodologically robust, clearly defined or are closely coupled with policy tools are instrumentally used. The interviewee stated: ‘[t]here are of course some, such as the biodiversity [indicator] that is complex. But then it is more about political will. Or gender equality. They are debated. But we stipulate laws [about it] all the time’. The same interviewee pointed out that the methodological robustness of the GDP indicator has not prohibited the debate over other – possibly better – measurements of economic wealth.

Judging by the interviewees’ opinions about the properties of indicators, it seems that although less methodologically robust indicators are often used conceptually, and although one of the main goals with the conceptual use is to increase methodological robustness, less methodologically robust indicators are still used instrumentally and methodologically robust indicators are often part of a continuous conceptual work. Therefore, despite robust methodology and clear definition being pointed out as important factors for policy applicability (and to reduce ‘symbolic use’), indicator factors do not seem to explain more than a limited degree of indicators’ policy role. Instead, it seems as if there is a qualitative threshold which indicators must pass in order to be included in the set at all – a threshold which neither a sustainable consumption, water nor financial market stability indicator passed. Once included, the methodological quality of the indicator explains little of its particular policy role.

User Factors

A related explanatory factor is the level of stakeholder support. All indicators have been chosen and developed in broad consultation rounds, but asked whether the indicators enjoy the same status, several interviewees – in particular from the opposition parties and the SPD as well as the civil servants working primarily with the environmental aspects of the strategy – emphasised that some indicators are more *consensual* than others. The aspect of the level of consensus concerned both the definition of the policy goal (what to measure) as well as of the indicator (how to measure it). The interviewees pointed to the government debt, renewable energy sources and education and training indicators as more consensual, whereas indicators such as biodiversity and land use were considered more controversial. One SPD MP noted:

Yes, subjects that are very politically controversial [...] are not sometimes measured, or you hide in a debate about what the correct measurement would be. A current example [is] poverty and wealth distribution. [The measurements] are all criticised. [...] There might be agreement if we really wanted. But there are of course interests that the difficult political topics, we don't do so much about them. So we leave them out.

Similar to the interplay between indicators and goals noted above, this points towards that political consensus about policy goals (rather than methodological quality of indicators per se) is necessary for users to be able to use an indicator. In the cases whereby political consensus cannot be reached, a longer period of conceptual rather than instrumental work is required.

There was also some support that individual actors' power matters for explaining the role of indicators, although interviewees differed in their views on which role individuals actually play. All interviewees shared the view that in the final instance it is up to the minister, ministry or the dominant government party to decide upon the instrumental use and influence of particular goals and indicators. When a specific form of use is not mandatory or there are few sanctions attached to non-use, the actual use of the indicator is ultimately a question of the interests and relative power of policy agents. However, when asked about the specific impact of partisan constellation of the government, politicians, NGO representatives and civil servants tended to express rather different views. Whereas a labour ministry civil servant argued that political leadership plays an important role in particular concerning the emphasis put on various aspects of sustainability, the civil servants from the environment ministry considered the government constellation rather unimportant. One of the interviewees from the environmental ministry argued that as the strategy has been increasingly integrated in government work, and as most civil servants who work with the day-to-day implementation do not get exchanged with changes in government constellations, the degree to which partisan constellations affect the implementation is limited. The interviewee from the Chancellery similarly emphasised that the political leadership of individual ministries matters relatively little as strategy implementation is the joint responsibility of overall government. The MPs, Council and NGO representatives on the contrary all considered partisan constellation as crucial. In particular the status assigned to different aspects of the strategy was deemed dependent upon which parties are currently part

of the government as a whole and within individual ministries. At the same time, all interviewees confirmed that the growing consensus about the need for stronger institutions for implementation has helped circumscribe the discretionary power of individual actors. Most importantly, the political support within both the federal government and the major parties of the parliament – including the support by Chancellor Angela Merkel since 2005 – has been central to stabilising the role of the strategy.

Context Factors

A basic prerequisite for the instrumental use and influence of an indicator is that the federal government actually enjoys legislative and regulatory capacity in the field. This is not always the case. In several areas, in particular concerning social and environmental issues, much power to influence developments lies with private sector actors or at the Länder or local government levels. Indicators related to issues where local and regional authorities are responsible are almost exclusively used conceptually in discussions and consultations for binding in and motivating external policy actors. The labour ministry civil servant noted: '[t]he power of politics and government should not be overestimated. There are different social areas where government has proposals, but that does not mean [that it has] the constitutional or legislative capacity to achieve this'. Instrumental and conceptual use can therefore be seen as different strategies for dealing with issues of different legislative status.

When asked about what other institutional features are important for an indicator to be used, three interviewees mentioned aspects related to the question of how often and by whom indicators are monitored and reported. The Statistical Office publishes an indicator report every two years, but some indicators are evaluated more often by various stakeholders. The NGO interviewee pointed out that the GDP indicator is monitored and reported almost daily by different societal actors, which increases its influence. As other indicators are reported more seldom (some environmental and social indicators are only reported bi-annually with the publication of the indicator reports), policy makers are not held accountable to those indicators to the same extent, meaning that their influence is reduced.

However, as legislative capacity and reporting practices have not changed much, these factors cannot account for changes in use and influence over time. Instead, a primary context factor that was mentioned in several interviews as having helped to increase the instrumental influence of indicators can be termed 'external events' or 'windows of opportunity'. The financial and Euro crises after 2008, the Fukushima nuclear reactor disaster in 2011 and the adoption of the Europe 2020 Strategy at the EU level were typically mentioned as examples of 'policy levers' which had helped put certain sustainability issues higher on the policy agenda. Two of the interviewees suggested that the introduction of a larger number of fiscal indicators and the emphasis on economic sustainability in the 2012 progress report as well as the incorporation of a new national debt rule (the so-called 'debt brake') into constitutional law in 2009, could be seen as direct consequences of the dramatic events in the wider socio-economic surrounding. The environment ministry civil servants and a Green Party MP pointed towards the Copenhagen Climate Summit in 2009 and the UN SDG process as giving impetus to the environmental sustainability indicator work. Rather than pointing towards the importance of policy actors primarily, such external events

highlight how the role of indicators may change in response to the socio-political opportunity structure or changes in the institutional context.

The perhaps single most important factor for explaining the growing influence of the strategy and indicators, however, and a question on which most interviewees seemed to agree, was that the formal strengthening of the institutional support of the strategy has had a major effect (albeit that there was also wide acceptance that there is still room for improvement). Aspects of 'imposed use' have increased both in quantity and in quality over time, through more personal, financial and institutional resources attached to implementation. However, the growing institutional support seems to concern some indicators more than other. Several of the interviewees – in particular among those who work closely with environmental sustainability issues – noted that indicators seem to be organised into a sort of hierarchy, a hierarchy that is expressed through the institutional support of the individual goals and indicators. One MP who was also a member of the Advisory Body suggested that this implicit or explicit 'hierarchisation' is a way to deal with goal conflicts within the overall strategy. By attaching more institutional support to some of the indicators (such as incorporating the 'debt brake' into constitutional law), these indicators are assigned a higher position in the hierarchy, in turn increasing their instrumental role. And although ministries are required to consider all sustainability aspects in their legislative processes, the non-consideration of some goals and indicators come with more sanctions than others. When asked which goals stand at the top of this hierarchy, the interviewee mentioned economic indicators. However, it was also noted that as the ultimate power to decide upon which institutional support should be provided for the different goals and indicators lies with the dominant policy actors, the impact of this context factor partly refers back to the issue of consensus and partisan interests. A conclusion is that the use and influence of indicators is ultimately explained by a combination of institutional and political support, and that the two factors may relate to one another either as amplifiers or constraints.

Last, asked about the importance of the underlying 'problem structure', there was some support for the view that indicators and policy goals reflecting 'well-structured' problems are more influential. However, most interviewees had difficulties in defining exactly what a well-structured problem was. One civil servant interviewee mentioned simplicity in cause–effect relationships, another the applicability to the general policy process and that the solution should be reachable with normal market-economic or democratic processes. One government party MP noted that some goals and indicators, such as resource conservation and reducing the intensity of goods and passenger transport, do not comply very easily with the goal of economic growth and therefore are less 'structured'. The NGO representative noted similarly: '[t]he environmental policy is of course always in crazy competition with the market economy, namely growth. [...] Otherwise our state model does not work, that is our social contract. [...] And growth has first priority.' An environmental ministry civil servant explained the degree of instrumental influence by whether a 'normal' degree of government intervention was sufficient for achieving the goal:

This democracy issue is really important. If one complains that we cannot achieve everything, well, we do not live in an authoritarian system. In East

Germany, women were paid equally [as men]. That was the rule. [...] So on the one hand sustainability is strongly dependent on that citizens organise themselves, on the other hand there are some societal goals that can only be achieved with a strong state. But [to find the right] balance is difficult.

Although some basic degree of compatibility with growth prerequisites and established democratic practices seems to be a fundamental feature of an influential indicator, the problem structure might not always lie with the problem 'out there' prior to policy treatment. Instead, a dialectic relationship between conceptual and instrumental use of indicators can lead a relatively unstructured problem to become more structured over time. The Council interviewee highlighted that the act of defining and measuring complex societal developments means emphasising some aspects and ignoring others, and is an important step to reduce complexity – or increase the structure of the problem. The NGO representative mentioned that the relative importance of efficiency indicators can be seen as a part of the 'structuring' of the sustainability challenge so that it becomes compatible with growth prerequisites and supportive of a 'technological fix'. Moreover, assigning quantitative goals to societal developments often means that political rather than just natural phenomena are considered. An environmental ministry civil servant pointed out that although the Environmental Ministry in a report from 2009 stated that the long-term goal of land use should actually be 0 hectares per day, the goal was set to 30 hectares per day, on the basis that the 30 hectares goal has to be reached first for the goal of 0 to be realistic.⁶⁷ This could likewise be seen as a sort of 'structuring' that makes the problem more fit for the policy process. In sum, it seems that the influence of an indicator is dependent on some degree of structure in the underlying policy problem, and until a sustainability problem reaches (or is given) some minimum amount of structure, it is confined primarily to being treated in a conceptual rather than instrumental way.

CONCLUSION

This study has examined the role of indicators in the policy process in the context of the German national sustainable development strategy. The study has found that the use and influence differs among indicators as well as has changed over time. Conceptual use is a central approach across the indicator set and was particularly dominant during the adoption phase, when indicators were used as tools for focusing the debate and identifying stakeholder positions. Instrumental use and influence has increased lately, in particular after 2008. Although the 'imposed' instrumental use formally concerns all indicators equally, there are marked differences in the actual implementation. It was also found that the scope for symbolic use, though always present, has become more limited over time.

Indicator factors, user factors and context factors all contribute to explaining the policy role of indicators, but a main finding is that a higher degree of stakeholder consensus as well as the institutional setting of the indicator are main explanatory factors for higher degrees of instrumental use and influence. The notion of consensus concerns both the underlying policy goal as well as how to measure that goal. The notion of institutional setting entails that the problem definition fits with legislative capacities and

does not contradict main rules-of-procedure for a capitalist-democratic state. Most importantly, it entails that the indicator is supported by personal, financial and institutional resources. It was also found that conceptual and instrumental use remain complementary strategies for dealing with conflicting policy goals, ordered into a sort of hierarchy. Within this hierarchy, indicators with weaker support or reflecting less consensual views tend to exert a lower de facto instrumental influence and be more open to conceptual debates. Moreover, although the final decision on whether and how to use an indicator inevitably remains with individual policy actors, it was found that the formal strengthening of the strategy over time has helped reduce the scope for purely symbolic use.

The overall findings of this study suggest that indicators are an important and useful instrument in German sustainability governance processes – for creating shared knowledge, defining problems and shaping policy. The findings thereby add new insights to the broader literature about indicators' policy role: whereas earlier studies have struggled to find evidence of instrumental influence, this study argues that the persistent efforts to strengthen the implementation aspects of the strategy as well as a high degree of political consensus about the importance of enforcing sustainability policy throughout government, have led to a relatively high degree of imposed instrumental use. Relating these findings to the general discourse on the role of knowledge in policy, the findings support the (constructivist) view of knowledge and policy as interlinked processes of identifying and handling a problem. In this process, indicators serve multiple functions both for structuring the policy problem as well as for facilitating different forms of policy responses. The more unstructured the initial problem, and the less 'fit' the problem is with the institutional setting or with dominant power structures, the more conceptual work is required to come to a reasonable degree of structure. Importantly, the findings point towards how conceptual and instrumental use may be fruitfully combined to create an 'active' role for indicators. Whereas the rationalist view largely perceives indicators as passively *reflecting* existing problem structures or already established stakeholder positions, this study has shown that indicators can contribute more actively to the policy process by helping to *identify* those positions, *structure* the fundamental problem and thereby *help formulate* policy responses. Returning to the notion of 'co-production' of knowledge and policy, the above analysis supports the view that knowledge and policy are continuously co-produced.

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