11   Conclusions

In this book, I have analyzed German science policy for cooperation with developing countries and emerging economies in the field of sustainability research, its institutional embeddings and production processes through the lens of the Sociology of Knowledge Approach to Discourse (SKAD), complemented with insights from constructivist policy analysis. The combination of both enabled me to conceptualize and explain science policy as a specific type of discourse, including a) the actors involved in perpetuating and renewing the policy discourse, b) the processes of discourse production in a policy setting, c) the contents of the policy discourse, and d) the effects of policy on implemented projects in a meaningful way.

In my analysis, the combination of SKAD and constructivist approaches to policy processes enabled me to shed light on various empirical aspects of policy making and to reflect on theories of policy processes through a perspective of knowledge sociology. SKAD proved as a highly suitable conceptual frame for the analysis of policy. I considered policies as a specific discourse with specific rules for discourse creation, discourse stabilisation and actualisation. The practices of creating new policies – from issuing a new call for proposals, to the funding of research projects and to creating policy programmes and strategies – accordingly were conceptualized as instances of discourse reproduction. Viewing policy as discourse enabled me to expose the interconnections between ideas and structures which contribute to the stability of policy ideas and which prevent discursive change.

In this final chapter, I would like to draw some conclusions in view of the BMBF's science policy for cooperation with developing countries and emerging economies in the field of sustainability research and its relevance for society. I argue that in its current shape, it is not fulfilling its role of fostering a preventative science for global sustainability satisfactorily. Based on my empirical findings, I maintain that *first*, the direction of science policy in the Sustainability Subdepartment is coined by a high level of discourse stability which makes a continuation of policy more likely than policy change (ch. 11.1). *Second*, the discursive direction taken does not adequately enable the German research community to engage in a type of science adequate for dealing with global sustainability challenges (ch. 11.2). *Third*, I suggest a type of science policy that fosters the production of essential

transformation knowledge for global sustainable development (ch. 11.3). Further research questions are then exposed in chapter 11.4.

While in my empirical analysis, I intensively focused on Megacities and IWRM funding initiatives as exemplary funding initiatives, I also compared the findings to further funding initiatives for international cooperation in the BMBF's Sustainability Subdepartment. My findings thus reflect insights on the policy processes and policy discourse within the Sustainability Subdepartment's funding initiatives for cooperation with developing countries and emerging economies. As argued in chapter 4, I postulate that my findings are generalizable beyond the individual interviewees for the discursive perspective on science policy for cooperation with developing countries and emerging economies in sustainability research. In view of my findings on the core discourse of the BMBF's science policy as well as the subordinate role of sustainability (ch. 8), I also put forward that findings are valid for the entire ministry. As a qualitative social science, discourse analysis cannot claim to obtain findings transferable to other contexts. However, additional interviews carried out with project participants and BMBF staff in other funding initiatives within and outside of FONA allow for a careful assumption that my findings in view of policy processes might be transferable to further policy and implementation contexts. Yet, scientifically sound generalisations would require further research.

11.1   Discourse stability and discourse change

Through the lens of SKAD, I examined why the policy discourse takes a certain direction, while other discursive pathways are *not* taken up and actively excluded. Throughout the book, I have exposed several factors that contribute to the specific orientation of science policy towards a predominantly economy-oriented rationale. Thus, I also dealt with the question of discourse *dominance*: What stabilizes the current policy discourse, which aspects potentially lead to change? In this conclusion, I highlight the main factors and point to the consequences in view of sustainable development.

The policies of the BMBF are characterized by a high degree of discursive stability. I have demonstrated that although within the structures of the BMBF, there is large room for agency, it is not seized (ch. 6, 7, 10). Formally, there are little restrictions for decisions to deviate from or remain true to strategies and programmes in issuing calls for funding. Heads of unit often could, but rather don't change the discourse – policy continuation is more likely than policy change, due to the embeddedness of discourse in the institutional structures, the redundancies in policy processes, as well as the distribution of power which fosters the exclusion of alternative discourse.

11.1.1   Discourse stability

Structural embeddedness: Dispositives in the policy setting

The main policy discourse as well as the subdiscourse on research cooperation with developing countries and emerging economies in sustainability research are embedded in previous social conditions, thus depending on and further influencing both the production of accepted knowledge as well as the institutions (re)producing knowledge (Keller 2001; 2013). In the policy setting investigated empirically, the BMBF's Sustainability Subdepartment, I therefore consider the arguments used, decisions taken, choices made in view of the direction and scope of policies as well as the deeper rationale of science policy to be embedded in a *dispositive*, which includes the organisational structures, the formal responsibilities, actor constellations, the budgetary distributions among departments, rules and institutions, etc.

Due to the dominance of economy-focused innovation for German prosperity as a leitmotif of science policy, high tech lies at the heart of entire thematic departments. In contrast, globally encompassing sustainable development is *not* a core part of the BMBF rationale – and especially not those aspects of sustainable development that are political in the sense that they would require overcoming conflicts of goals with economy-oriented innovation for Germany.

Sustainability research is limited to the Sustainability Subdepartment's endeavours, which are rather oriented towards environmental issues (ch. 8). As a consequence of the missing institutionalisation of a science policy discourse on global, encompassing development, no dispositive in form of funding structures or strategies exist for further, but equally crucial aspects of sustainable development, such as research on global inequalities, for example. Research for sustainable development in a global, encompassing sense thus may be termed an *orphan issue* of German science policy, which lacks structures (such as a working unit within the BMBF) as well as speaker positions to bring the topic up on the agenda (such as an independent lobby advocating the global common interest included within the policy process). The prevalent policy conceptualisation of sustainable development hence has a power effect in coining the institutions of its reproduction in agenda-setting processes.

In addition, and equally important, policies aim at specific effects on the real world, thus aim at further power effects. The BMBF's practices of transmitting policies into funding practices rely on additional structures and practices as a dispositive. As a type of translation of discourse contents to a further level, any implementation process of policies bears risks of re-orientations. The BMBF demonstrates its interest in controlling external effects and ensuring a discourse reiteration rather than a reinterpretation. It makes use of a *dispositive* aimed at monitoring projects

in their implementation, and thus relies on a strategic infrastructure of practices and institutions aimed at creating and monitoring the external effects of discourse. In seizing small spaces of agency, the projects are able to reinterpret and adapt the policy discourse, however. In doing so, instead of openly contesting and thereby changing the policy discourse as such, spaces of agency within project implementation lead to a discourse continuation and stabilisation rather than to discursive change. Allowing degrees of reinterpretation and adaptation of the policy discourse on the scale of project implementation may be an (unconscious) strategy of discourse stabilisation (ch. 10).

Redundancies in strategies and practices of policy making

Pre-existing political strategies and programmes embody structures as well as ideas of discourse and thereby potentially guide further discourse production. They are both containers of contents as well as crystallisation points of the norms and rules underlying discourse production. The interdependence of different strategic levels as well as practices of funding was a further factor of discourse stability. The BMBF policies for cooperation with developing countries and emerging economies in sustainability research generally follow previous lines of thematic policy discourse: Strategies and programmes, which officially are designed to function as guide of future activities, often use past funding initiatives and past strategies as building blocks. While theories of the policy cycle postulate that through the practice of funding, policies of a higher conceptual level, such as strategies are transmitted from the level of *ideas* to the level of *action*, I demonstrate that the relation between strategies, programmes and concrete funding initiatives is complex, redundant and reciprocal. The analysis of the concepts used to legitimize international cooperation initiatives in sustainability research enhance the idea. Analysis shows that the arguments chosen and lines of thinking followed in strategies and programmes are based on previous policies, including funding activities. At the same time, newer funding initiatives, as concrete manifestations of the policy discourse, draw upon pre-existing strategies as well. The interrelation of programmes, strategies and activities is thus circular, leading to discourse stabilisation.

Excluding alternatives and shaping directions: Power issues in discourse production

Instances of discourse actualisation, such as in agenda setting for new funding initiatives or in transmitting policies into funding practice, further contribute to discursive stability. In case of the BMBF's science policy for cooperation with developing countries and emerging economies, the ministry is in power over the discourse direction, which is closely linked to the BMBF's power over the institutional

arrangement and its power over the distribution of resources. While the science community is potentially free to choose research subjects according to their own interests, they voluntarily sign up to the BMBF's funding system. Underlying reasons are an increasing dependency on third party funding in applied sustainability research and a lack of alternatives. At the same time, the BMBF's power also depends on the back up of large parts of the research community, who either find their research interests well-represented in the opportunities offered – or who seize the spaces of agency to adjust and creatively adapt the research carried out within the implementation of the research projects funded by the BMBF.

In their perceived dependency, the researchers signing up for BMBF funding sustain the power constellation by attributing power over the discourse direction to the ministry and not questioning it. In a similar line, other external actors with perceived or existing dependencies, such as the project management agencies, contribute to discourse stabilisation. Power over the direction of discourse encompasses instances of agenda setting (ch. 6, 7) as well as of transmission of policy objectives into project implementation (ch. 9, 10).

The empirical data gathered on German science policy for cooperation with developing countries and emerging economies in sustainability research allow some deeper reflections on the concept of discourse coalitions. Discourse coalitions are a strategy of discourse stabilisation (Keller 2011), and indeed fulfil this function in instances of designing new funding initiatives, thus instances of discourse actualisation. While the term *coalition* implies joint knowledge production between actors sharing a similar discursive storyline, the present case of policy making is coined by unequal power distributions: The interaction with external actors in actualizing the policy discourse is shaped by and further stabilizes the distribution of power among the actors involved. Two general tendencies can be observed in the interaction with different external actors: Rivalries, with a clear demarcation of boundaries, on the one hand, and coalition building on the other. As such, external bearers of alternative discourse – such as ministries with different policy objectives – who question directions of science policy, are rarely invited to take part in agenda-setting processes. Due to lacking regulations regarding the agenda-setting process, the BMBF is in power to in- or exclude advisors according to the own needs and interests. Involving only those actors in designing new policy initiatives who stabilized previous policy discourse fulfils a dual function. It adds legitimacy, but at the same time the BMBF also maintains its power over the further discourse production, its direction, the further distribution of resources as well as its own institutional status quo. Power is thus a central element in the case of coalition building scrutinized here.

As a consequence of the stability and the dominance of the BMBF's core discourse on German prosperity through technology-oriented research, the dominant discourse also predefines ways of thinking and acting and thereby prevents certain

things to be thought or said. This is illustrated through some interviewees inability to perceive water management from a more systemic point of view and their insistence that technology solutions are essential. At the same time, spaces for contrary opinions narrow and speaker positions are limited. Actors within the ministry who deviate from the standard focus of science policy aimed at economic innovation are rather pictured as troublemakers, which illustrates how the dominance of a specific discursive orientation may lead to discrediting the bearers of alternatives and their exclusion.

11.1.2   Change of discourse orientation

Changes in the overall discursive direction of science policy – such as introducing sustainability as a novel frame for previously environmental research or designing policy initiatives deviating from the core discourse – occur but are less common than the discursive reiteration in instances of discourse actualisation due to the reasons exposed in chapter 11.1. Changes rely mainly on *individual change agents* within the ministry, who introduce new external discourses – such as the sustainability concept – and institutionalize these in niches, which slowly inspire new strategies, programmes or funding initiatives.

FONA as a new programme for sustainability research illustrates this. A combination of multiple factors helped the new sustainability discourse in turning into the discursive frame for environmental research funding, culminating in the emergence of FONA and the corresponding departmental structures. Change in political leadership created a receptive environment for individual actors within the ministry to act as change agents and bearers of the new discourse. In addition, sustainability as a discourse did not appear out of nowhere, but individuals within the BMBF drew on politically opportune ideas which had already begun to institutionalize themselves elsewhere, such as in international political agreements. Moreover, sustainability had established itself as a concept in international public debates and there was a public demand for research on sustainability that policy makers took up. In the process of adapting sustainability to the BMBF's focus, the concept was depoliticized and adjusted to the core discourse of the BMBF (ch. 11.2).

On the scale of funding initiatives, the Megacities funding initiative and the African RSSCs, originating in the Sustainability Subdepartment's Global Change Unit, point at the potential of deviation from the standard focus of the BMBF on technological development and German economic interest. The existence of project funding outside of the discursive norm shows that spaces of deviance and alternative discourses exist. A precondition for policy actors to renew discourse by using spaces of agency within processes of discourse actualisation is the encompassing inclusion of diverse argumentative strands in policy strategies and programmes, such as FONA and the Internationalisation Strategy. The fact that strategies in-
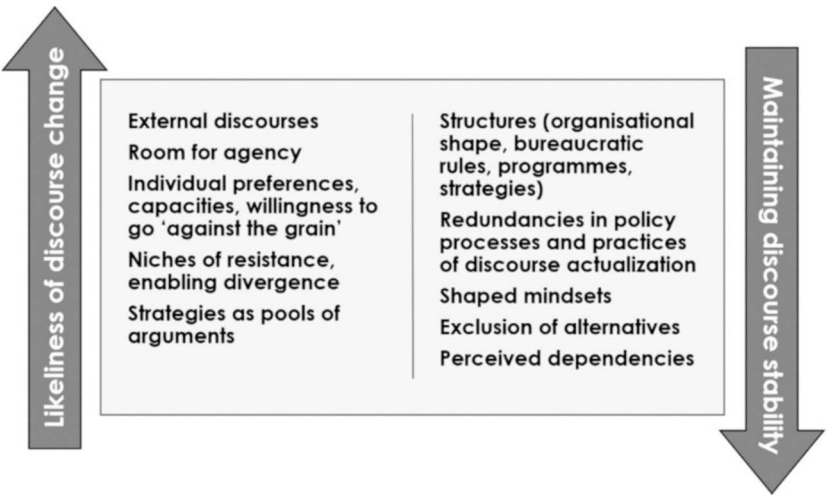
clude a broad spectrum of diverging rationales allows for the deviation of specific funding initiatives from the main storyline of policy. I establish that in designing funding initiatives, the responsible BMBF staff reinterprets strategies and picks out arguments selectively. The strategies thus rather function as a *pool of various arguments* than as a strict, narrow guiding frame. The spectrum of different rationales, legitimations and objectives within the BMBF strategies allows for a deviation from the main policy discourse, and thus enables discursive renewal on the level of funding initiatives. Without transgressing the discursive boundaries of FONA, the High-tech Strategy or the Internationalisation Strategy, the scope of objectives pursued by individual funding initiatives is therefore *potentially* large. Even initiatives such as the Megacities funding initiative, which deviated from the BMBF's policy core discourse (ch. 8.1) and aim at a holistic type of research and cooperation for sustainable development, do completely abandon the frame of strategies, but rather draw on different, less prominent lines of argumentation included in the strategies. This can be seen as a way of drawing on legitimations stemming from *accepted sources*, as deviation from the standard discourse is met with resistance.

Alternative discourse institutionalizes itself first within smaller institutional structures, such as the Global Change Unit, as a niche which enables divergence. Nevertheless, next to these external factors, change in discourse also relies on the individual change agents' willingness to stand up against dominant perceptions. The changes in the underlying ideas and in the practice of policy making in cases, such as the diverging focus of funding in the African RSSCs and the Megacities initiative, or the changes in practices in agenda setting towards including partner countries' governments in case of the CLIENT initiative, bear a potential of turning into the seeds for larger changes of policy discourse. I argue that this change from *within* the ministry may have more influence on discourse than the reinterpretation of policy discourse through projects in their implementation.

Figure 11-1 summarizes the factors contributing to discourse stability on the one hand, and those who increase the likeliness of discursive re-interpretation on the other. In conclusion, I argue that the high level of discourse stability depends on the following factors: First, the embeddedness of discourse in institutional structures as a dispositive; second, the redundancies in policymaking; third, shaped mindsets; fourth, the exclusion of discursive alternatives; and fifth, perceived dependencies of project management agencies as well as research projects from the BMBF; which all pave the way for a reiteration of discourse within processes of discourse actualisation. The likeliness of discourse change, on the other hand, is enabled by first, the room for agency in policy making which willing individuals seize as change agents. Second, it increases through the existence of external discourses surging in public. Third, niches of resistance enable divergence to the dominant policy discourse. Fourth, in case of the BMBF's Sustainability Subdepartment, in-

novative funding initiatives are also enabled by a property of political programmes and strategies: These functioned as a pool of arguments, enabling deviation instead of providing a narrow frame.

Figure 11- 1: Factors of stability and change in the policy discourse

Source: Own elaboration

11.2 The BMBF's sustainability concept vs. global sustainable development

The core ideas of German science policy, i.e. fostering German prosperity through science, technology, and innovation, guide the BMBF in its main discursive direction, including subdiscourses such as research cooperation in sustainability research. Congruent to the leitmotif of BMBF policy, benefits for the German partners motivate international cooperation in sustainability-oriented research. German interests and benefits are conceptualized as both economic interests, such as access to future markets, as well as research interest, such as access to partners or topics. Other argumentative strands are rarely taken up as legitimisation of international cooperation within BMBF. Research cooperation funded by the BMBF is hardly ever put into the context of conflict prevention, while the German Foreign Affairs Ministry explicitly draws on peace-building arguments in its initiative on external science policy (Auswärtiges Amt 2013). Similarly, the BMBF tries to set itself off from any rationales believed to be development-related. I have argued that