1 Introduction

This book deals with the role of science policy for global sustainable development. Cooperation between researchers in the so-called developing as well as the so-called developed world has a great potential to foster sustainable development on a global scale. However, science policies are decisive in setting a supportive frame for research cooperation. Against this background, this book explores German science policy for cooperation with developing countries and emerging economies[1] for sustainable development and seeks to understand why under the surface, sustainability is *not* the core objective.

At a first glance, sustainable development is increasingly shifting into the focus of German policies. In its Sustainability Strategy, the Federal Government acknowledges the importance of sustainability for its policies in view of its responsibilities on the national as well as on the global level (Bundesregierung 2016). Funds for research cooperation between Germany and developing countries or emerging economies have been continuously growing in the last decade. The German Government has corroborated education and research as a priority area of cooperation with developing countries and emerging economies in consecutive governmental periods (Bundesregierung 2009a; 2013; 2018a).

The Federal Ministry of Education and Research (BMBF) and its policies play an important role in international cooperation on sustainability issues. The BMBF is the largest provider of public funds for research cooperation between German researchers and those in developing countries and emerging economies.[2] Decisively

1 Throughout this book, I use the terms *developing country* and *emerging economy* to depict the countries, located mainly in the global South, that are enlisted as recipients of Official Development Assistance (ODA) by the Organisation of Economic Co-operation and Development (OECD). The classification draws on the World Bank's numbers on Gross National Income (GNI) (OECD 2018). In most developing countries and emerging economies, social and ecological problems persist. Compared to developing countries, emerging economies have a higher GNI and have presented higher levels of economic growth in the recent past (OECD 2010a). On the concept of development as such, see chapter 2.

2 Although no total numbers are available for expenditures on cooperation with all developing countries and emerging economies, the dimensions are illustrated by the numbers published on African Countries and BRICS: the BMBF allocated app. EUR 47 million on cooperation with BRICS

setting the course of cooperation, policies for research cooperation with developing countries or emerging economies are a field of science policy, and *not* of development policy in the German context. As a consequence, global development targets such as the former Millennium Development Goals (MDGs) or the current Sustainable Development Goals (SDGs) are of subordinate importance for international science policy.

In contrast to the Federal Ministry of Economic Cooperation and Development (BMZ), responsible for German development policy, the BMBF is not bound to fulfilling international agreements on development cooperation in funding science cooperation. Therefore, development-oriented agreements such as the Paris Declaration on Aid Effectiveness, or the Accra Agenda for Action and their follow up documents (OECD 2008) agreed upon in the Organisation of Economic Co-operation and Development (OECD) are no relevant policy frames of science cooperation. At the same time, science cooperation is not a central issue in economy-related international fora, either. As such, resolutions of the G20 – even in their non- binding legal function – rarely address the role of science cooperation (see Bundesregierung 2018b).

Given this absence of compulsory norms for international science policy, it is a question of empirical research to analyze on which basis the BMBF develops its specific policies and funds cooperation with developing countries and emerging economies. Throughout this book, I demonstrate that science policy always has a normative dimension and may potentially contribute to all possible scientific objectives – as well as to objectives beyond the boundaries of science, such as fostering economic development, solving societal or environmental problems or making better political decisions (Bucar 2010; STEPS Centre 2010). The discursive[3] direction chosen in science policy hence displays the choices and values underlying it.

Scrutinizing different science policies worldwide, scholars have shown that economic rationales are a commonly-accepted legitimation of science policy, while a rationale for non-economy related societal benefits seems to be less common (Nowotny et al. 2001; Sarewitz et al. 2004; Leach et al. 2010; 2012). German science policy, as I argue throughout this book, is not an exception to this general observation. Rather than contributing to global development targets, the BMBF's main objective is to secure German prosperity, as stated in a self-description of the ministry:

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in 2012 (BMBF 2014a: 410) and EUR 50.8 million on cooperation with African partner countries in 2013 (BMBF 2014b: 2), see chapter 5.

3 The term *discursive* generally signifies language-based, in contrast to *non-discursive*, not language-based. I do not examine symbolic or other non-language-based practices here, and the distinction above therefore is not required. In lack of a corresponding adjective, I use the term *discursive* in a meaning of *related to discourse*.

> "Education and research are the foundations for our future. The promotion of education, science and research by the Federal Ministry of Education and Research represents an important contribution to securing our country's prosperity." (BMBF 2015a)

The BMBF's main policy goal is thus *not* to foster sustainable development in Germany or abroad, even though *sustainable development* is referenced as a policy frame in the national Sustainability Strategy as well as in specific research programmes, i.e. the BMBF's successive framework programmes on Research for Sustainable Development, FONA (BMBF 2005a; 2009a, 2015e). Hence, science policy could hypothetically envisage all types of effects on society, including global sustainable development. Empirical research shows, however, that it displays different directions. This book traces why this is so.

1.1 Shedding light on German science policy for cooperation with developing countries and emerging economies

This book describes the empirically grounded research conducted in the frame of a PhD thesis. As such, it is linked to fulfilling a specific research objective: Shedding light on German science policy for international cooperation. Specifically, I examine science policy and funding by the Federal Ministry of Education and Research (BMBF) in the field of sustainability research aimed at supporting research cooperation between Germany and emerging economies or developing countries. The focus of analysis within this study is first, on the *processes and actors* involved in policy discourse, *second*, on the underlying *ideas and objectives* of BMBF policies and programmes for cooperation with developing countries and emerging economies, and *third*, on the *effects* of the specific policy conceptualisations on project implementation.

Being interested in the *what* and *why* and *who* of German science policy on a social science background, I chose the *Sociology of Knowledge Approach to Discourse* (SKAD), developed by R. Keller (Keller 2005; 2011a; 2011b; 2011c; 2012; 2013) as analytical approach to research. A constructivist perspective thus forms the fundament of this research project.

Empirically, research is based on a qualitative approach – semi-structured interviews, participant observation and analysis of policy documents – among policymakers, employees of project funding agencies and project participants involved in designing policies, administrating funding and implementing research within the Integrated Water Resources Management (IWRM) funding initiative (BMBF 2004a) and the Megacities funding initiative (BMBF 2004b). In order to obtain deeper insights into the funding initiatives in practice, I carried out participant observation

in two research projects, LiWa, located in Lima, Peru, a German-Peruvian project funded in the Megacities initiative; and IWAS Agua-DF, carried out in Brasília, Brazil, a German-Brazilian research project funded in the IWRM scope.

The Sustainability Subdepartment's funding priority on Social-Ecological Research (*Sozial-ökologische Forschung*, SÖF), is often highlighted as an example of the BMBF's encompassing and inclusive orientation of sustainability research funding. However, I argue that SÖF funding, while crucial for transdisciplinary sustainability-oriented research in Germany, remains a niche and does not reflect the BMBF's core discourse (ch. 8). In view of its participatory agenda processes, its transdisciplinary approach and encompassing social-ecological focus, it is an outlier.[4] Furthermore, SÖF as a funding priority is not aimed at international research cooperation as such. While in some SÖF-related funding initiatives, such as the junior research groups, international cooperation is possible, it is not a crucial element of SÖF. The main funding for international cooperation in FONA takes place in the subareas of *Global Change* and *Resources and Sustainability* (BMBF 2009a). In consequence, I selected the Megacities and the IWRM funding initiatives *purposefully* to illustrate the process of transmitting the policy discourse into concrete objectives. The two initiatives are comparable in scope, but nevertheless are characterized by differences that promised interesting contrasts. As a common trait, both funding initiatives aimed at cooperation with developing countries and emerging economies. As unilateral initiatives, they were issued by the BMBF in 2004 and designed based on German interests. The projects funded within both initiatives took place outside of the frame of any bilateral agreements on science and technology between Germany and partner countries. I therefore expected comparable insights on modes of agenda setting, programme design and involvement of partner countries' governments. However, the funding initiatives demonstrated different orientations of research objectives, which seemed interesting points of differentiation: Although both funding initiatives aimed to fund inter- and transdisciplinary research, the IWRM initiative was rather oriented towards technological approaches, while the Megacities initiative targeted systemic research and initially did not prescribe a specific solution pathway.

While in my empirical analysis, I especially focused on Megacities and IWRM as exemplary funding initiatives, I also compared the findings to further funding initiatives for international cooperation in the BMBF's *Subdepartment for Sustainability, Climate, Energy* (that I abbreviate as *Sustainability Subdepartment* in the fol-

4 This is mirrored by the amount of funding for SÖF. Between the years 2000 and 2015, SÖF received a total budget of EUR 120 Mio, less than 10 Mio per year (BMBF 2015h). Even though annual funding increased from EUR 13,3 million in 2012 to a planned EUR 20 million budget for 2019 (BMF 2014; 2019), the overall budget remains only a small part of the overall budget for FONA – which amounted to almost EUR 2 billion from 2010-2014 (BMBF 2019a).

lowing chapters). A few years have gone by since I conducted empirical research (in 2012-2014). Since then, both the IWRM as well as Megacities funding initiatives have come to an end. Some funding initiatives, such as CLIENT, have issued new rounds of calls for proposals – CLIENT II, in 2015 (BMBF 2015i, 2017). As a follow up for the ending projects within the Megacities funding initiative, the BMBF initiated the Rapid Planning project within the Megacities funding initiative's frame (BMBF 2018).

The ministry itself has undergone some changes, as well. Its organisational structure has been slightly rearranged (ch. 5). At the time of research, the subdepartment in charge of international cooperation in sustainability research was the *Subdepartment for Sustainability, Climate, Energy*. In the new organisational shape, it is now the *Subdepartment Sustainability, Provision for the Future.* The subdepartment's working units have been slightly reorganized, as well. New units, such as on *Systemic Mobility, City of the Future* have been established; previous units have extended their responsibilities, such as the Unit for *Resources, Circular Economy, Geosciences* (BMBF 2019b). Additionally, the *individuals* working within the BMBF, in projects and as experts have continued their paths through life. While some of the people interviewed have changed to different working positions, others have retired, new people have entered.

On the one hand, the developments show that changes in policy are happening, even though policy seems to be characterized by high discursive stability (ch. 6, 8, 11). On the other hand and nevertheless, I argue that my findings in view of the general orientation of science policy for cooperation with developing countries and emerging economies continue to be pertinent: Recent documents on policies for international cooperation document that the main political mindset remains without essential changes (see: BMBF 2017). I therefore argue that my findings reflect insights on the policy processes and policy discourse within the Sustainability Subdepartment's funding initiatives for cooperation with developing countries and emerging economies.

1.2 Sustainable development as normative background

Based on the view that science policy is inherently normative, I argue that *global sustainable development* would be a legitimate objective for German science policy targeting cooperation with developing countries and emerging economies. In fact, sustainable development (or the BMBF's interpretation thereof) has already turned into an explicit frame of reference for BMBF funding in the area of sustainability research. I am thus specifically interested in investigating and exposing in which way the concept of sustainable development is constructed in the BMBF's policies for international cooperation.