ners from companies or other stakeholders (from governmental bodies, implementation agencies etc.) to be included in the consortium, such as in the IWRM or CLIENT calls (BMBF 2004a; 2004b; 2010b,) (ch. 10).

5.3 International funding initiatives in FONA

As other BMBF research programmes, FONA is primarily dedicated to supporting German researchers. Nevertheless, FONA has served as a framework programme for funding many initiatives aimed at supporting cooperation between Germany and developing countries and emerging economies (Appendix B-2). Whereas in chapters 6 and 7 I will present an analysis of the actors involved and processes leading to the concretisation of funding initiatives, programmes and strategies, this section shall at introduce FONA's different funding initiatives of recent years for the sake of a broad overview.

As an umbrella, FONA gathers a large variety of different funding initiatives. Apart from the topic of the individual funding initiatives, main differences between them are to be found in their structural set up, which in turn is linked to the mode of agenda setting. Older funding initiatives for international cooperation are mainly *unilateral* initiatives, such as the Megacities initiative or the IWRM initiative. As unilateral initiatives, they were designed by the BMBF according to German research interests, without consultations with the governments of cooperation countries. As a consequence, although international in their scope, they are financed solely through the BMBF and generally not cofinanced by the partner countries. The mode of agenda setting as well as funding modalities in unilateral funding initiatives have severe consequences for the research projects implemented in their scope. Effects range from practical problems, such as finding funding for researchers in the partner country, to the ethical problem of repeating old patterns of cooperation between well-paid foreign experts and local researchers as mere recipients of knowledge (ch. 7, 9).

However, newer initiatives also emerge from *bilateral* initiatives with other countries or regions. For example, CLIENT, the funding initiative for International Partnerships for Sustainable Technologies and Services for Climate Protection and the Environment (BMBF 2010b; 2015i) stems from a joint political initiative, the Dialogue for Sustainability between Germany, Brazil, Russia, India, China, South Africa (the BRICS countries) and Vietnam, which started in 2008 (BMBF 2009b; 2009c; BMBF and MCT 2010; BMBF and DST 2010; BMBF and Indian Department of Science and Technology 2011). CLIENT emerged as a follow up of the dialogue as a call coordinated between Germany and the partner countries (BMBF 2010b). Similarly, the German-African Regional Science Service Centers (RSSCs) are examples of bilateral or even multilateral funding initiatives. In their creation, the BMBF and governments of Southern and West African countries negotiated on topics and funding before WASCAL and SASSCAL came into being in 2010 (interview with PT01).

A further point of differentiation between the funding initiatives is their different orientation of research. While Unit 723 at the time of research was dedicated to Global Change Research, Unit 724 at the time of research was responsible for Resources and Sustainability, and their funding initiatives mirror the focus.[6] Additionally, funding initiatives for international cooperation originating in the Resources Unit are generally rather oriented towards technological approaches, while funding initiatives stemming from the Global Change Unit rather target interdisciplinary research including socio-ecological approaches. Chapter 9 will elucidate these differences.

5.3.1 Funding initiative Integrated Water Resources Management (IWRM)

As an initiative originating in the Resources Unit, the IWRM call in 2004 made explicit reference to previous activities of the Resources Unit in the field of technology-oriented water resources research. These included an initiative on Decentral Water Supply and Disposal Systems, running between 2002 and 2012 (BMBF 2013c), as well as a project on Export-oriented Research and Development in the Field of Water Research that had been funded previously (BMBF 2014j). In contrast to the IWRM funding initiative, this was not a genuine international cooperation project, but exclusively sponsored German partners in order to adjust German technology to other countries' conditions to facilitate technology transfer (BMBF 2014j; 2014k; 2014l). The IWRM funding priority was thus embedded in a prior thematic focus on water resources within the BMBF. Interestingly, a further large funding initiative in water research, the GLoWa initiative, which originated in the Global Change Unit and which had started in 2000, was not mentioned in the call.

5.3.2 Funding initiative Future Megacities

Similar to the Resources Unit, the Global Change Unit put its initiatives into its own context of holistic research. African RSSCs were pictured as consequences of its prior initiatives such as GLoWa (Research on global hydrological cycles and development of integrated water management strategies at the regional level) and BIOLOG (Biodiversity and Global Change). These were early and large-scale funding initiatives for cooperation with African countries, both starting in 2000 (Appendix

6 To avoid confusion with new numbering of the working units of the subdepartment, the unit previously termed Unit 723 will be referred to as *Global Change Unit*, while I will refer to the previous Unit 724 as *Resources Unit* in the following chapters.

B-2). As I will argue in later chapters, self-referentiality or the lack of cross-unit references can be explained through the distinct foci of the calls (technological vs. more holistic approach) and the accompanying inherent competition between the units within the ministry (ch. 7, 9).

Contrary to water management, however, urbanisation was a new field of research funding for the BMBF before the Megacities funding initiative came into being. As such, the initiative did not follow the footsteps of any prior funding initiatives. The BMBF started the initiative in 2004 with a focus on Research for Sustainable Megacities of Tomorrow, in its main funding phase refocused at energy and climate efficient structures in megacities. Within the initiative's scope, the projects targeted diverging aspects of the overall programmatic focus, ranging from water management in Lima to urban agriculture in Casablanca, from waste management in Addis Ababa to public mobility in Hefei, among others (PT-DLR 2012).

5.3.3 Project funding outside of funding initiatives

As projects in the frame of CLIENT, IWRM or Megacities and other funding initiatives exemplify, BMBF projects are generally funded within funding initiatives, which encompass several projects of a common core theme. In the original IWRM funding initiative (BMBF 2004a), projects had to define a reasonably sized, manageable basin area from certain regions specified in the call – the Mediterranean/Middle East, Central Asia, South East Asia, China or Sub-Saharan Africa. In the end, projects targeting river basins in China, Indonesia, Mongolia, Israel-Jordan-Palestine, Iran, Namibia and South Africa were selected, all of them aimed at creating holistic adapted IWRM concepts for their specific basin (Ibisch et al. 2013).

However, in some cases the BMBF also funded individual projects in line with its general funding priorities, but outside of a specific funding initiative or a specific call for proposals. Examples of individual projects that thematically fell into the scope of FONA but were not part of any specific funding initiative or priority are the German-Brazilian project on Mangrove Dynamics and Management, MADAM, funded from 1995-2005 (PT-J 2014) or the German-Brazilian Amazonian Tall Tower Observatory funded between 2010-2015 (BMBF 2014m).

Sometimes, individual projects were later blended into existing funding initiatives. For example, the BMBF funding priority on IWRM originally only consisted of eight core projects chosen after the call for proposals. However, several projects funded individually through other funding sources within the BMBF are listed within the IWRM spectrum in official IWRM publications such as the project overview elaborated by the BMBF funded IWRM accompanying project (Ibisch et al. 2013). Among the projects belonging to the IWRM funding priority, but not originally stemming from the IWRM call, are the Vietnamese-German project WISDOM, the German-Uzbek Khorezm project, or the IWAS projects (interview with PT06). The International Water Research Alliance Saxony, *Internationale Wasserforschungsallianz Sachsen* (IWAS) in turn, was originally funded within the BMBF initiative for excellence in research and innovation in the new federal states, *Spitzenforschung und Innovation in den Neuen Ländern* (PROSIN) (BMBF 2014n). Neither international orientation nor a focus on IWRM were required in the call; but the ministry specifically encouraged the later project consortium to come up with a proposal (interview with PP30). Designed with an international focus on IWRM, IWAS then moved into the administrative and thematic responsibilities of the Resources Unit and was counted among the IWRM projects (interview with PA02).

Individual projects may also be funded without a public call for proposals. For example, as a follow-up to a pre-existing project in the Aral Sea basin, the German-Uzbek Khorezm project, was blended into the IWRM funding initiative, but had a slightly different focus and approach. Not aimed at IWRM schemes per se, it targeted environmental, social and economic problems around irrigation and water management in the Khorezm region, such as unsustainable practices, and land degradation or salinisation (ZEF 2012, interviews with PP26, PP41, PP42). Reasons for projects that come into being outside of funding initiatives are diverse. Often, these projects are funded, if on a higher political level, cooperation is desired – either in order to strengthen ties with a partner country or because a certain topic is considered as a priority within the ministry (interview with PA14).

Based on the data collected in my fieldwork, within FONA I concentrate on the Megacities initiative as well as on the IWRM funding spectrum – including IWAS – in the empirical chapters. As argued in chapter 4, the funding initiatives are structurally comparable in the sense that they were both unilateral BMBF initiatives, not cofunded by partner countries (neither in the frame of ST&I cooperation agreements, or else), but present different foci of research. Wherever other funding initiatives, such as CLIENT or the Regional Science Service Centers in Africa offer interesting contrasts for the analysis, I will also refer to them in the empirical chapters.