

De Facto Governance of International Research Collaborations in Nano S&T

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Increasingly research, in particular in fast developing scientific fields like nanosciences and technologies, is done in collaborations cutting across national borders. International research collaborations are motivated by the need to bring together highly specialized knowledge, to work towards applications and to mobilize resources to launch new and expand existing research topics. In collaborations among research institutes with diverse institutional and national backgrounds a particular issue is the compatibility of their inherited governance structures.

The main research question studied is how the governance of public research institutes influences the common governance of international collaboration. The study also analyses motives to collaborate internationally and factors facilitating and hampering collaboration.

Empirically, collaborations of German public research institutes (Max Planck, Fraunhofer, Leibniz and Helmholtz) in nanosciences and technologies with their counterparts in France, Belgium, and the Netherlands are studied. Qualitative, exploratory research based on case studies and reconstructive process tracing of collaborations is undertaken combining multiple data sources: semi-structured interviews (more than 30) and organizational, project, publication and CV data. On the basis of literature review and empirical results concepts of international inter-organisational research collaboration and its governance are developed and emerging forms and potential types of common governance are identified.

This research is based on a number of background assumptions about governance of international collaborations among research institutes. Firstly, the institute governance matters for collaborations (not only scientists' ideas and public policy initiatives). Secondly, the motives to collaborate internationally at institute level are driven by dynamic interplay between thematic, organisational and resource rationales. Thirdly, the concept of *de facto* governance is useful for analysis of research governance, covering not only formal rules but also informal norms, routines and practices. Finally, an important characteristic of the governance of collaborations is the tension between path-dependencies of historically established research institutes on the one hand and isomorphic processes on the other.

Preliminary results suggest that the development of international collaborations is characterised by interplay between self-organisation of scientists, governance of institutes and support from diverse national and transnational policy initiatives. International collaborations act as a 'change agent': as a mechanism to develop new research topics and groups; as a facilitator of isomorphic governance changes. Still, some historically developed national and organisational differences remain, sometimes as hampering factors, e.g. differences in PhD systems, project funding and transparency in decision-making.