Peat Leith, Kevin O'Toole, Marcus Haward and Brian Coffey
Enhancing Science Impact: Bridging Research, Policy and Practice for Sustainability
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In the German annual study *Wissenschaftsbarometer*, 54 per cent of the participants stated that they would, in general, trust science and research (Wissenschaft im Dialog/Kantar Emnid, 2018). Although this number has stayed relatively stable over the last four years, it has recently received increased attention in the scientific discourse. In the face of climate change and other upcoming sustainability issues such as biodiversity loss and resource exploitation, scientific disagreements about stakes and responses will increase, often leading to insecurity in civil society. The target of science is to produce more knowledge and better results, allowing for more informed decisions. For the outcome to be social innovation rather than conflict, constructive bridging between research, policy and practice is needed.

With their book *Enhancing Science Impact*, the four Australian authors address challenges emerging in sustainability science. Observing conflicting issues and approaches, they focus on the role of the social and institutional infrastructure that connects science, society and decision-making. Critically reflecting on relationship patterns between research, policy and citizen engagement, they argue for an integrated approach where science plays an active role in governance procedure rather than being a disclosing and allegedly objective informant. From each of these three sectors, sustainability programmes and projects emerge. In order to tailor them to specific situation or contexts, a deep understanding of the issues of multiple stakeholders and their problem-structuring is crucial. Consequently, the focus moves from the necessary scientific information to a concept of boundary work and its use to 'produce relevance, credibility and legitimacy work in an integrated way'.

In respect of their arguments which are built up theoretically throughout six chapters (with chapter 1 as the introduction and chapter 8 as the conclusion) it becomes clear that this book simultaneously is and is not what it is promised to be. First and foremost, it is not a concrete recommendation for action, and it gives no detailed solutions for bridging between different stakeholders. However, while for many books this omission would be a knock-out blow, in the case of Leith et al. it feeds their argument. The main hazard in overcoming challenges and conflicts in sustainability science is that there is no concrete solution, but rather a need for hard work in the sense of questioning, reflection and critical thinking on all sides. The complexity of writing a practical manual on a topic that questions the ontological representation of different disciplines within a project becomes evident in these 200 pages. Although each author refers

back to particular theoretical ideas such as science and technology studies, the book does not follow a distinct school of thinking. Instead, it refers back to a variety of scientists and includes diverse theories about doing research in a reflective and integrated way. While this makes the argumentation traceable and underlines it, it also leads to an extensive circumscription of the key points. At some points, this makes the book deviate from the practical approach outlined on the cover, and it veers into conversations between scientific discourses. As a consequence, the authors constantly shift between an 'indispensable guide for research leaders, science program managers and science policy advisers' and an epistemological thinking piece. Their suggestions for how research, policy and practice can be bridged require not only 'hard but important work', but also an 'array of skills and capacity, beyond scientific and analytical skills'. Furthermore, by going beyond the singular actor focus and including networks, relationships and organisations in which knowledge is constructed, they link in important reflections about the context in which boundary work has to happen.

Significant for these reflections are problem-framing and problem-structuring, as well as the five 'focus levels of boundary design' outlined in chapter 7. This list of elements of the social and institutional infrastructure combines the diverse ideas previously outlined and provides fundamental pillars for a critical reflection of one's own work throughout the process. However, the outlined elements of developing a context-appropriate infrastructure remain limited by their anthropocentric focus. The natural environmental as an essential aspect of sustainability issues remains a category pinpointed through the eye of the (human) actors, relationships, objects, networks and organisations. While products and objects are focused on as being important components 'through which collective meaning is created', nature is (almost) always between the lines. (In fact, a similar critique conducted by Dovers (1996) is mentioned once in chapter 4.) While the book purports to follow a constructivist approach, there is no reflection on the nature–society dualism. In addition to the assumptions of the sociology of scientific knowledge (SSK), a distinct reference and deconstruction to how this relationship is represented in science is rather important to reach beyond the point of 'whether environmental problems are either social or natural' (Irwin, 2013: 88). The crux for sustainability science is that compared to intersections of stakeholders in other decision-making processes, the necessities of some must outweigh those of others. In order for nature, society, and economy to stay in balance within the definition of the Brundtland report, 'development meets the need of the present without compromising the ability of future generations to meet their own needs', all three areas need their (representative) stakeholders. This premise must be fulfilled when creating a lasting infrastructure: sustainability as a consequence is not only a balancing act of existing stakes, but it is also the will to ensure that all stakes, even those which are not represented by humans, are

addressed. To sum up, work on the design of an additional boundary element to constitute the position of nature within the problem-framing and structuring would complete the boundary elements as outlined in the book.

Overall the book gives important ideas of how science, policy and practice can be balanced. While it becomes clear that this step needs hard work and highly skilled people, with their outline of particular foci, the book stays practical. Readers with interests ranging from student projects to national development plans could gain ideas for their framework of reflection by reading this book. Nevertheless, one should not forget that bridging research, policy and practice for sustainability is not done simply by comprehensive problem-structuring, but will involve action as well.

References

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Irwin, Alan. 2013. *Sociology and the Environment. A Critical Introduction to Society, Nature and Knowledge*. New York: John Wiley & Sons.

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Abstract:

Instead of drawing out exact paths for overcoming barriers, the authors of the book *Enhancing Science Impact* refer back to the necessity of reflecting on all aspects of research. There is no one-fits-all solution of approaching sustainability. Instead a comprehensive understanding of problem-structuring is necessary for addressing current challenges. Even though the work provides a practical foci-guideline, a critical reflection on how nature is represented within research programmes and projects is missing.

Key-words:

Sustainability, constructivism, nature/society dualism, environmental governance