



How to walk the talk? Developing actions for sustainability in academic research



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ABSTRACT

Sustainability in higher education is a growing field of reflection and practice, yet integrating sustainability and academic research (as a distinct pillar of academia – next to education, societal service and campus operations) is still considered a challenge. This study: i. Proposes a conceptualization of sustainability in academic research based on an explorative literature review; ii. Suggests a range of actions fostering sustainability in academic research based on an expert-based workshop; and iii. Critically reflects on a case study entailing a university-wide sustainability transition initiative. The proposed conceptualization of sustainability in academic research is shaped by the diversity of perspectives in the scientific literature and focuses on the degree of disciplinary integration within and outside academia. Actions to foster sustainability in academic research include actions with regard to: i. Research funding; ii. Research & career evaluation; iii. Research organization; iv. Capacity building and v. policy. The emerging range of possible actions as designed by research managers as well as the early experience of individual higher education institutions in experimenting with sustainability in academic research contribute to the translation of sustainability into a range of tangible and realistic research actions for higher education institutions.

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1. Introduction

Sustainability is heralded worldwide as an idea, a process, a strategy and/or an objective that allows to address the current situation of concatenated ecological, social and economic crisis, labeled together as ‘global change’ (Biggs et al., 2011). The modern, formal and most widely disseminated conceptualization of sustainability originated in the wake of what is commonly known as the Brundtland Report (World Commission on Environment and Development, 1987). While the intergovernmental United Nations milestones contributed to the creation and the maintenance of the global sustainability momentum (as exemplified by the recently adopted Sustainable Development Goals (UN, 2015) and summarized by Quental et al. (2009)), the sustainability concept is shaped, used and ‘owned’ by an ever-widening range of stakeholders (Hopwood et al., 2005). This democratization of sustainability is a positive evolution as it testifies to the power of attraction and the

enduring relevance of the concept (Hugé et al., 2013). The diversity of stakeholders engaging with sustainability gives rise to a multitude of interpretations, ranging from the *status quo* to reformist and radical agendas (Hopwood et al., 2005). Hence it is difficult to pinpoint any hypothetical exact definition of sustainability. This ‘constructive ambiguity’ (Robinson, 2004) makes the concept flexible, as it can be translated in a range of actions adapted to the needs and possibilities of a diverse set of stakeholders. Sustainability principles (e.g. normativity, equity, integration etc.) have been proposed in order to avoid trivial conceptualizations and in order to make the dynamic interpretational limits of the concept tangible (Waas et al., 2011). Recently, Griggs et al. (2013) proposed a working definition for sustainability, which we adopt as a basis for discussion: ‘development that meets the needs of the present while safeguarding Earth’s life-support system, on which the welfare of current and future generations depends’. It is not our intention to close the debate on the interpretation of sustainability, which is often synthesized as a conflict and/or continuum between strong and weak sustainability (Dietz and Neumayer, 2007). We see sustainability as a concept whose sense is given by its relevant usage (Lafferty and Meadowcroft, 2000). If sustainability is to move

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beyond the gap between rhetoric and action, it should become a decision-guiding strategy, defined as a way forward to make happen a desired future (Hugé et al., 2013; Pope et al., 2004).

Higher education institutions have always been actors of change and innovation in society (Beynaghi et al., 2014; Peer and Stoeglehner, 2013; Ramos et al., 2015), and the call and quest for sustainability has found fertile ground in campuses, journals and curricula all over the world. Higher education institutions and researchers have a critical role to play in creating a sustainable future, as they educate many of the professionals who lead, manage, and teach in our society (Khalili et al., 2015; Wittmayer and Schöpke, 2014). Moreover they can be sustainability innovators through research activities and act as models for the community (Wright and Wilton, 2012). A multitude of initiatives have emerged in highly differentiated contexts, ranging from the inclusion of sustainability in mission and vision statements to greenhouse gas reduction programs (Ramos et al., 2015). International declarations have been produced in an effort to guide higher education institutions in integrating sustainability in their institutional dimensions (Lozano et al., 2014; Sylvestre et al., 2013).

The reflections on the roles and processes engaging higher education institutions in sustainability have even led to the emergence of a new field, called 'sustainability in higher education' (Wals and Jickling, 2002). Sustainability in higher education is intrinsically multidimensional but is often represented pragmatically as consisting of four key components: i. Making campus operations more sustainable (e.g. reducing the ecological footprint of a campus, waste management etc.); ii. Learning and teaching for sustainability (e.g. integrating sustainability in curricula); iii. Integrating sustainability in research; and iv. External operations (e.g. the provision of services to society through partnerships with governmental and non-governmental actors (Hoover and Harder, 2015; Waas et al., 2011)). Often efforts are concentrated on only one of these dimensions at a time, which is motivated in part by an understandable risk reduction strategy aimed at preventing the ineffective dispersal of scarce resources such as time and funds, but which carries with it the risk to focus only on quick and easy fixes to a higher education system that remains largely unchallenged. While we are aware of this risk of compartmentalization of sustainability efforts (Ramos et al., 2015), this study focuses on one specific component, i.e. the integration of sustainability in research. The integration of sustainability (in one way or another) into research has been comparatively neglected and remains under-represented in the scholarly literature (Waas et al., 2010). This is not due to a lack of attention devoted to research strategies yet it can be attributed to the difficulties of grasping what sustainability means for existing and new research initiatives, both fundamental and applied. This challenge is closely linked to the more fundamental discussion centred on the conceptualization of 'science for sustainability', which is interpreted by Müller (2003) as science performed in a solution-oriented context of social relevance. In order to clarify this discussion and in order to provide suggestions for implementation, this study aims to:

- Contribute to conceptualizing 'sustainability in academic research';
- Suggest a range of actions that could contribute to the integration of sustainability in academic research;

This is done this in three ways. First, a review of the scientific literature regarding science for sustainability is performed, in order to conceptualize 'sustainability in academic research'. Second, the process and findings of a workshop aimed at compiling a set of possible actions to integrate sustainability in research is presented, at the level of Belgian (Flemish) higher education institutions.

Third, a university-specific initiative in which sustainability was integrated in research is presented.

2. Methods

This section describes the methods followed for the literature review, the workshop and the case study.

2.1. Literature review

In order to better understand what is meant by sustainability in academic research, an explorative review of the scientific literature was performed with a focus on the characteristics of sustainability science and research for sustainability.

Given the lack of a narrowly defined field (sustainability science and –academic– research for sustainability being broad concepts relevant to an equally broad range of authors and readers), a fully comprehensive literature review was not possible. Inspired by the 'integrated literature review' approach (Kohtala, 2015), this literature review aims at synthesizing the knowledge from diverse sources and aims at portraying a complex concept through a diverse and broad sampling frame instead of producing a complete compendium of the literature. Hence references are drawn from a wide range of relevant journals. Furthermore, three journals were targeted for a targeted systematic literature review: the *Journal of Cleaner Production*, *Sustainability Science*, and the *International Journal of Sustainability in Higher Education*. The three journals used for the systematic literature review were consciously selected as they cover sustainability in academic research in complimentary ways. Together, these journals provide a dynamic vision on what sustainability science entails (Sustainability Science), on the conceptualization and challenges with regard to sustainability in higher education (Journal of Cleaner Production), and on initiatives taken in a variety of higher education institutions (Journal of Sustainability in Higher Education). Use of the keywords 'academic' AND 'research' (jointly present) in the search engines of each journal yielded respectively 1175 (Journal of Cleaner Production) 133 (Sustainability Science) and 436 (International Journal of Sustainability in Higher Education) hits. All articles' titles and abstracts were subsequently screened and articles that were considered relevant for this study's literature review were used. The selected body of literature was analyzed qualitatively. The findings of the literature review are synthesized in Section 3, and focus on the context of sustainability challenges, the conceptualization of sustainability science and the translation into academic research for sustainability.

2.2. Workshop

The findings of the literature review were summarized in a draft synthesis note introducing 'science for sustainability' and offered to an audience of research managers, research & development units and research unit leaders in all the higher education institutions (universities and colleges) of Flanders, Belgium's northern region. This note was drafted at the request of the regional Flemish government's Department of Nature, Energy & Environment's *Eco-Campus* Unit. Having received this synthesis note, representatives from every higher education institution in Flanders were invited to a one-day workshop in Brussels in March 2015. The purpose of the workshop was twofold: first the workshop aimed to gather information from participants regarding their perceptions and comments on science and research for sustainability; second, the workshop was action-oriented and aimed at listing a range of possible actions that may facilitate the realization of research for sustainability in Flemish higher education institutions. Participants

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