



Learning for sustainable development in regional networks



Jana Dlouhá^{a,*}, Andrew Barton^a, Donald Huisingsh^b, Maik Adomssent^c

^a Charles University Environment Center, José Martího 2/407, 162 00 Praha 6, Czech Republic

^b Institute for a Secure and Sustainable Environment, University of Tennessee, Knoxville, TN, USA

^c Leuphana University Lüneburg, Institute for Environmental and Sustainability Communication, Scharnhorststrasse 1, D-21335 Lüneburg, Germany

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ABSTRACT

University outreach and especially regional cooperation among universities is the main theme of this Special Volume, the foundations of which were created as a result of cooperation among several Higher Educational Institutions and other non-academic partners, and which was developed based upon their willingness to share and extend their experiences beyond the context of their initial community in which they worked. The fourteen articles included in this Special Volume expand upon the theme from a European perspective – the specific circumstances and cases they build upon, however, are part of a much broader grouping of ‘Regional Centres of Expertise,’ (RCEs) that were established under the Decade of Education for Sustainable Development Programme of the United Nations University-IAS in 2003. This concept has received worldwide attention and has been successfully applied in more than 100 cases. The RCEs are acknowledged in different countries of the world, while there are also many other regional sustainability initiatives not included within this framework. The authors of this Special Volume sought to extrapolate generic knowledge associated with overcoming certain types of boundaries (academic, cultural, etc.) and to share their insights with the scientific community for discussion and use to support sustainability changes in academia. The focus of many of the research articles is upon the dynamics of the learning processes that occur between/among different stakeholders. These processes reflect a change in communication practices, which can have impacts upon modes and patterns of knowledge generation and can result in a more systemic transition in education towards sustainability at different levels of academia and of society. The planning team of this Special Volume anticipates that the experiences and theoretical considerations presented in these articles will trigger broader discussions on the roles of scientists and educators as catalytic facilitators in the debates about what type of future societies we are seeking to develop. Key recommendations are made of practical ways to help students, of all ages, to envision and to implement sustainable societal development in cooperative, rational and systematic ways, globally for the short and long-term future of all societies.

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1. Context and design of the Special Volume

Higher education (HE) and research institutions are contributing to sustainable development through investigations and/or through development of new methods and approaches in the interdisciplinary area. The science-policy interface has also been highly productive in respect to integrating sustainability values within environmental sciences and nature conservation, technology and innovations, management, psychology and sociology, and other disciplines. The sought-after transition to Education

for Sustainable Development (ESD), due to its transdisciplinary character, has triggered fundamental changes in HE institutions themselves – in their study programs, strategies and management. These institutions, while educating students in environmentally and sustainability-relevant disciplines, are also fostering ethically relevant societal practices and lifestyle changes, thus nurturing future opinion leaders who will have an impact on decision-making processes. All this has been made possible by addressing interdisciplinary challenges in science and education and fostering innovation in its many academic fields. These efforts have been explored and reflected in the literature including in more than 80 articles that have been published in the last ten years in the Journal of Cleaner Production.

To build upon these results, and to provide an insight into more or less fundamental transitions in science and higher education

* Corresponding author.

E-mail addresses: jana.dlouha@czp.cuni.cz, jana.dlouha@gmail.com (J. Dlouhá), andrew.barton@czp.cuni.cz (A. Barton), donaldhuisingsh@comcast.net (D. Huisingsh), adomssent@uni.leuphana.de (M. Adomssent).

with regards to sustainability, this Special Volume was designed to reflect upon emerging practices in knowledge generation and distribution that are often subsumed under the term *learning* to stress its reciprocal character.

Although the papers included in this volume were developed by dedicated colleagues from many different countries and representing a large variety of academic disciplines, we have worked collaboratively to analyse and review *processes*, rather than educational subjects and methods, in which existing knowledge is *shared* or communicated within different types of learning environments among diverse target groups/stakeholders.

Methodologically, we focused on information flows within networks of cooperation and existing *communication practices* among experts/teachers, learners/students, and involved stakeholders and interested lay people. Our reflections are focussed upon situations where knowledge acts as a 'change agent' in sustainable economic, social or environmental development within a *learning community* at the local, regional or European level with the potential to have an effect on its transformation. We consider this meta-analysis, discussion and development of knowledge-on-knowledge, to be important from a theoretical point of view in order to more effectively investigate and test how new concepts or paradigms in science or education can be useful for SD or ESD purposes, and to better understand what is actually going on in many HE and other institutions that are committed to accomplish societal transformations towards more sustainable practices.

Many of the articles in this volume reflect upon the on-going activities of universities in sustainability-oriented regional cooperation, for example within spontaneously occurring institutional frameworks such as Regional Centres of Expertise (RCEs). Through focussing on extracting, generalizing and possibly analysing this experience this writing team sought to capture the catalytic potential of knowledge – with the conclusion that the ability to catalyse changes and concrete actions is the core principle of knowing if we want to know *to do* rather than know *about*. Simultaneously, the team emphasised that *learning*, defined as dynamic processes, which occur both within and beyond educational settings, are essential features of all sustainability-oriented transitions that exhibit a common social experience and reflection thereupon. They also underscored the challenges to expand the theoretical bases for these dynamic and essential processes designed to help societies make the transition towards ecologically, socially and economically sustainable development.

Theoretical consequences are associated with the *social role* of knowledge, with its increased sensitivity to the needs of contemporary societies. Due to it, science has acquired a higher level of reflexivity, an ability to analyse on-going processes and consequently to enhance capacity to catalyse improvements through involvement and empowerment of stakeholders in these transition processes via innovations in different fields. Processes of knowledge generation, distribution and exchange have been changed to become more open and inclusive hence producing new communication patterns and altering authority of science itself.

The changes in processes of sustainability-oriented communication in science and higher education observed in diverse contexts are outlined in the following overview of the articles included in this Special Volume. They convey the current situation in many European countries where attempts are being made to find generic and transferable principles so that communication and the sharing of experiences across different boundaries of discourse, discipline, culture are supported. The theme of regional cooperation among universities is addressed from many perspectives. The fourteen articles in this Special Volume are presented under the following themes:

- 1) Investigating potential contributions of universities to sustainable regional development;
- 2) Exploring, analysing and assessing the role and significance of regional learning and innovation networks for sustainable development;
- 3) Introducing case studies with a different geographical and educational scope;
- 4) Mapping regional settings and learning strategies for higher education.

2. Investigating potential contributions of universities to sustainable regional development

Dlouhá et al. (2013b) begins by summarising the rationale and intention behind collating articles in this Special Volume on the theme of university outreach and the associated evolution of the role and practices of universities with regard to sustainability transition. The concept of scientific impact, in particular, is discussed with regard to the possibilities of changing it towards a more socially oriented impact in relation to science and education.

Adom̂ent's (2013) paper introduces the core issue of this Special Volume, namely communication patterns between science and society. The author argues for a new participative form of communicative practice in which science plays a role in deliberative democratic processes so that trans-boundary governance can be generated in which the role of science is altered. Therefore, it becomes more involved in communication interplay and the reconciliation of conflicting and diverse viewpoints besides its traditional role in knowledge production, distribution and related control processes. Context specific knowledge and reflexive practice of this kind are relevant to innovation processes, which help to catalyse societal transformation.

Čada and Ptáčková (2013) demonstrate that there are limits to the changes in communication practices in science by describing the situation in one post-communist country, the Czech Republic. Analyses of the research policy framework details the science-policy interface, its form, functions, conditions, and the opportunities for and barriers to cooperation among diverse stakeholders in a Czech-specific context. In a country where civil society has evolved rapidly over the past twenty years, but mechanisms of democratic dialogue have not, the science policy framework is vital for defining the role of science in society, yet it is currently not supportive of a re-orientation towards social impacts and open communication.

Sol et al. (2013) argue that cooperation in regional networks where diverse stakeholders are engaged inevitably involves social learning. The authors focus on finding the most significant features of this knowledge exchange model. Their action research, which was undertaken within a network project aimed at supporting regional innovation processes, identified *trust* and *commitment* as repeated features in communication between local actors. The article concludes by highlighting the need to share values in a creditable environment to overcome differences wherein the *reframing* factors contribute to deeper understanding of the dynamic learning processes.

3. Exploring, analysing and assessing the role and significance of regional learning and innovation networks for sustainable development

In contrast to what was stated in the foregoing paragraphs, Karatzoglou (2013) reveals that the field of university outreach has highly practical relevance in the sustainability area, but still lacks

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