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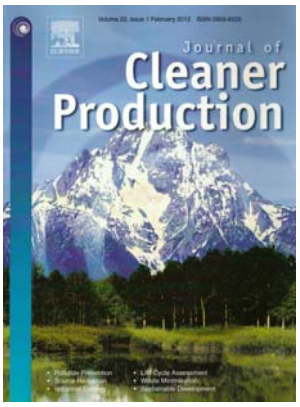

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Emerging Areas in Research on Higher Education for Sustainable Development – Management Education, Sustainable Consumption and Perspectives from Central and Eastern Europe

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Abstract

Management education for sustainable development, sustainable consumption in higher education institutions, and higher education for sustainable development in Central and Eastern Europe can be considered as three highly relevant emerging areas in research on higher education for sustainable development. The transformation of management education to meet the increasing societal demands for responsible business has been reinforced in the light of the current economic situation. In this context, it is explored which competencies are needed for tomorrow's business professionals and which concepts and approaches are useful to foster these competencies. With regard to sustainable consumption, several universities have initiated creative projects that have transformed campus life and have had an impact on staff's and students' attitudes and behaviour. Moreover, initiatives in Central and Eastern Europe show interesting developments, for example how sustainability issues have been integrated into the curriculum, particularly in the context of intense coal mining as well as urban planning. Thus, this Special Volume of the Journal of Cleaner Production presents the current progress in concepts and practices in the three emerging areas management education for sustainable development, sustainable consumption in higher education institutions, and higher education for sustainable development in Central and Eastern Europe, which to date have not been intensively discussed in the scientific discourse on higher education for sustainable development. In an overall manner, the Special Volume provides evidence that the following issues are of particular importance for future research and development in higher education for sustainable development: measuring learning outcomes; accounting for different geographical, political and cultural contexts for higher education for sustainable development; and prioritising strategies for sustainable organisational change.

Keywords
Higher education, Sustainability, Higher Education for Sustainable Development, Management education, Sustainable consumption, Central and Eastern Europe

1. Introduction

Current trends of natural resource consumption have been causing irreversible damage to the planet and its atmosphere and cannot be continued indefinitely (see e.g. Meadows et al., 2004; IPCC, 2007; Rockström et al., 2009). Additionally, competition for natural resources is exacerbating the gap between the world's rich and poor (see e.g. Davis, 2004; Lean, 2011). In this respect, global justice and mutual respect for cultural diversity play a pivotal role if development is to continue indefinitely (e.g. Shiva, 2005). Therefore, socio-economic, cultural and ecological dimensions must be taken into account in order to find and follow a path of sustainable development that ensures justice across the generations (e.g. Costanza et al., 2007; Blewitt, 2008; Weizsäcker et al., 2009; Randers, 2012).

Against this backdrop, a vital question is: How to progress the path towards sustainable development? It is apparent that existing ways of thinking (and acting) need to be overcome in order to enter a process of transition in terms of sustainable development. To achieve this, learning processes on a local, regional and global scale need to be initiated so that the sustainability paradigm can be further developed within the areas of academia, policy-making and administration as well as business management. Both existing and emerging problems, globally interrelated and complex "ill-defined problems" (Scholz et al., 1997), can only be solved if professionals have integrative competencies (cf. Barth et al., 2007; Lambrechts et al., 2013; Rieckmann, 2012; Shephard et al., 2011; Wals, 2010; Wiek et al., 2011) – these competencies include the ability to cooperate with scholars from different disciplines (*inter*disciplinarity) and practitioners (*trans*disciplinarity) (cf. Godemann, 2011; Lang et al., 2012). A paradigm shift towards sustainability will thus greatly impact the education and training processes of future professionals, opening up new perspectives on lifelong-learning processes and developing new attitudes towards nature, different cultures, and consumption patterns.

It is therefore that education has been prioritised as an important strategy that has a major role in bringing about sustainable development (cf. Vare and Scott, 2007). With the Agenda 21 (Chapter 36) emphasising that education will play a major role in achieving sustainable development (UNCED, 1993), ESD has received increasingly political attention. Worldwide there is a strong political commitment to integrating education for sustainable development (ESD) at all educational levels (cf. Wals, 2012). Its importance has been globally recognised with the establishment of the United Nations Decade for Education for Sustainable Development (DESD) (2005–2014). UNESCO, as the Decade's lead agency, defines ESD as "a process of learning how to make decisions that consider the long-term future of the economy, ecology and equity of all communities" (UNESCO, 2005: 17).

According to Haigh (2005: 32) the Decade "offers academies the best chance to date for making the deep and radical changes that will be necessary if the world's higher education institutions are to enact their responsibilities for creating a better and self-sustainable world." Through their major functions of education, research and outreach, universities are able to generate new knowledge and contribute to developing competencies and raising awareness towards sustainability issues. Moreover, they can directly make effective regional impacts (Dlouhá et al., 2013b). The goal of higher education for sustainable development (HESD) is to enable individuals to reflect, through multicultural, global and future-oriented perspectives, on their responsibility for the complex effects of decision-making and behaviour. New learning cultures are vital which do not merely confirm academic traditions but, in an open-

minded, reflexive and participative process, examine their potential for a sustainable future. To this end, each university should become a learning institution that creates teaching and learning settings characterised by aspects of inter- and transdisciplinarity, participation, problem orientation as well as the linking of formal and informal learning. These learning settings must support the development of key competencies for dealing with the challenges of (un)sustainable development (Barth et al., 2007; Lambrechts et al., 2013; Rieckmann, 2012).

Over the last 20 years, a number of declarations on HESD have been adopted (cf. Lozano et al., 2013b), and there has been considerable progress in implementing sustainability into higher education institutions (cf. Karatzoglou, 2013; Lozano et al., 2013a). Universities have implemented a wide range of ESD activities and have created ESD networks (cf. Barth et al., 2011). In his review of learning and institutionalisation processes, Wals (this volume) concludes that although integrating sustainability learning into institutions like universities has proven to be difficult because of other educational reforms which follow sometimes different or even contrary goals, "Higher Education Institutions are beginning to make more systemic changes towards sustainability" (Wals, this volume). Particularly "[t]he UNESCO ESD Chairs mainly play a role in conceptualizing learning, competence and systems change" (ibid.). However, Wals emphasises that "in practice learning processes and multi-stakeholder interactions (…) oftentimes involving the development of alternative values, are still scarce around the globe" (ibid.). Despite these positive developments, it can be seen that there is still a long way to go until sustainability becomes a widely accepted guiding principle in higher education (cf. Lozano et al., 2013a, 2013b).

Against this background, the UNESCO Chair for Higher Education for Sustainable Development, located at Leuphana University of Lüneburg, Germany, organised the 4th International Conference on Higher Education for Sustainable Development, with the title: "Higher Education for Sustainable Development: Moving the Agenda Forward". The conference took place from 14-16 September 2011 at Leuphana University of Lüneburg, Germany, and was jointly organised with the German Commission for UNESCO, the International Centre for Corporate Social Responsibility of the Nottingham University Business School, the COPERNICUS Alliance and the working group "Higher Education" of the UN Decade in Germany ("AG Hochschule"). It was the fourth in a series of conferences that had already been organised by the Chair together with different cooperation partners in 2005, 2007 and 2009 in Germany (Lüneburg), Mexico (San Luis Potosí) and Malaysia (Penang).

While the previous conferences dealt with general developments and challenges in HESD (Barth et al., 2011; Adomßent et al., 2009; Adomßent et al. 2006), the 4th Conference focussed on three emerging areas in HESD research: (1) management education for sustainable development; (2) sustainable consumption in higher education institutions; and (3) HESD in Central and Eastern Europe. This Special Volume presents and analyses developments, concepts and practices in these three areas, which to date have not been discussed intensively in the scientific discourse on HESD. It is structured as follows: In the next section we present the findings in the three thematic streams; in the conclusion we make recommendations for educators, managers and other stakeholders to engage with HESD as well as for future research.

2. The three thematic streams

2.1 Management education for sustainable development

The emerging debate about management education for sustainable development is reflective of the growing questions about the role of business schools and other management

education institutions (Khurana, 2010; Pfeffer and Fong, 2002; Starkey et al., 2004). In the light of governance scandals and other crises such as the economic downturn and climate change, management education has been accused of having failed to integrate reflections on ethical values, social responsibility and sustainability into the curriculum and to educate future decision-makers to act in the long-term interests of business and society (Currie et al., 2010; Herzig and Moon, 2013). As a consequence, there are renewed calls for reconsidering management education; and the heightened attention to this emerging field has led to an increase in literature on management education for sustainable development over the last years. Several journals have published special issues on management education, social responsibility and sustainability including the Journal of Management Education (Egri and Rogers, 2003; Forray and Leigh, 2012; Rusinko and Sama, 2009), Business Strategy and the Environment (Springett and Kearings, 2005), and Academy of Management Learning and Education (Starik et al., 2010). The development of the first global initiative on responsible management education – the United Nations supported Principles for Responsible Management Education (PRME) (UN Global Compact 2007) – represents another indicator and driver for the increased debate and implementation of responsible management education. This initiative has frequently been referred to as an important catalyst for the transformation of management education. Godemann et al. (this volume) introduce the purpose of the initiative and, supported by findings from empirical studies into the signatories' self-presentations, shed some light on the progress made by PRME signatories. Overall, there appears to be a growing development and institutionalisation of the responsible management education initiative. It is positively noted that institutional actors such as ranking organisations and accreditation bodies have begun to embrace the challenge. This is leading to better recognition and support of the vision of sustainable development within management and leadership education. Godemann et al. (this volume), however, also raise critical questions such as the level of organisational change within individual organisations and the sector's social accountability. Interestingly, the latter is generally under-researched and under-addressed within the area of HESD. Higher education institutions have long lagged behind other private and public organisations in accountability for their social impacts. That it is now specifically discussed in the context of PRME is due to the initiative's requirement that signatories have to make 'sharing information on progress' reports available to other signatories and stakeholders.

While issues of sustainability and responsible management education figure prominently on the international agenda, most business schools appear to have yet to respond in a coherent way to determining what constitutes key competencies in this area. Godemann et al. (2011) report that in PRME-related self-presentations there is often a vague articulation of the specific competencies business schools intend to foster through responsible business education. Some focus on critical thinking or stress the necessity of innovation to deal with societal problems, whereas others emphasise the value of traditional management knowledge. If management education curricula are to be redesigned, it seems that more debate is needed about which competencies future managers will need in order to deal with complex issues in a more responsible and sustainable way. Responding to calls made for more research in this area (cf. Kleef and Roome, 2007; Lambrechts et al., 2013; Starik et al., 2010), two papers of this Special Volume focus attention on the competencies needed for the responsible education of future managers and entrepreneurs. With respect to the profession of managers and the question of how they can become change agents of corporate sustainability, Hesselbarth and Schaltegger (this volume) propose using a competence matrix to structure basic components of higher education in sustainability management. On the basis of the practical experiences of 85 MBA students and insights from ten years of MBA education for sustainability management, the study explores the medium-term effects of the first MBA programme on

sustainability management in Germany and highlights the relevance of subject-specific, methodological, social and personal competencies for sustainability managers. Lans et al. (this volume) discuss competencies from the fields of entrepreneurship and sustainability education with the aim of exploring their similarities, overlaps and differences so as to build a foundation for educating sustainable entrepreneurs. The authors develop a set of competencies on the basis of focus group discussions with higher education teachers and a questionnaire-based survey among students.

Both contributions specify and reflect on which competencies are critical for management and entrepreneurship students to contribute to sustainability in their future professional careers. A related question refers to what are appropriate and resonant educational approaches. One challenging requirement of ESD is to integrate real-life issues into learning processes – which are characterised by complexity, uncertainty and interdisciplinarity. With regard to teaching methods associated with sustainability, previous research has shown that management education institutions apply a large spectrum of different methods to deliver responsible management education (Alcatraz, 2010; Godemann et al., 2011; Orlitzky and Moon, 2010). These range from field-based learning experience, problem-based learning and competitions to case studies, role-plays and simulations. One of the most popular approaches to management education is service-learning pedagogy. This is because of its ability to combine theory and application, to engage students in real-life problems and activities that address human and community needs, and to make them aware of and able to address the complexity of sustainability issues (Brower, 2011; Jacoby, 1996; Rands, 2009; Yorio and Ye, 2012). In this context, O'Brien and Sarkis (this volume) explore the value of community-based projects for integrative and reflective learning. They discuss the advantages and disadvantages of using sustainability consulting projects as a core pedagogical method for deep learning for sustainability education and evaluate experience gathered through 85 projects within four higher education institutions, including but not limited to management degree programmes.

Overall, we note some considerable overlap in the papers of this thematic stream with regard to the two areas of management education and HESD. This overlap exists in terms of i) focus (e.g. the interest in the issues of competencies and teaching methods), ii) frameworks and iii) blind spots (e.g. on the issue of accountability). We thus feel that our initial aim of more closely aligning initiatives in these two areas by devoting a thematic stream to the area of management education for sustainable development (for the first time in the series of the Chair's Conferences since 2005) was instructive and appropriate. Based on the discussions within our thematic stream sessions, we also expect that further progress in this direction could make an even stronger contribution to a sustainable development of business and society in the future.

2.2 Sustainable consumption in higher education institutions

Changing consumption and production systems in the industrialised world was already identified as a key challenge in Chapter 4 of Agenda 21 (UNCED, 1993) and later in the Marrakech Process on sustainable consumption and production following the Rio+10 Summit in Johannesburg (UN DESA/DSD, 2002). Throughout the Rio+20 final declaration entitled "The Future We Want", the need to promote sustainable consumption and production has been reaffirmed as critical, cumulating in the agreement to establish a 10-year framework of programmes on sustainable consumption and production (UN, 2012: Art. 97).

Consequently, within the debate about ESD, sustainable consumption has emerged as a cross-cutting theme and a key concern. The Rio+20 final document emphasises our "particular responsibility to nurture sustainable development and sustainable consumption and

production patterns" (UN, 2012: Art. 14) and calls on the education system to equip a new generation of students with the capacities essential to engaging in this cause (ibid.: Art. 101). In its international implementation scheme, the UN Decade on ESD explicitly aims to develop "knowledgeable consumers who purchase goods with low lifecycle impacts and who use their purchasing power to support corporate social and environmental responsibility and sustainable business practices" (UNESCO, 2005: 29). The pivotal role of consumption in ESD has been conceptually explored as education for sustainable consumption (ESC) both in the policy sphere (cf. IMELS, 2007) and in the scholarly debate (cf. Fien, 2000). Prominent practical initiatives stem primarily from the education sectors, in particular school education (cf. Thoresen, 2008; UNESCO and UNEP, 2007).

In the higher education sector, the debate about how consumer education can be conceptualised, implemented and delivered to students has met with relatively little response. While research and development on integrating general principles of sustainable development in higher education institutions have become established as a consolidated field of scholarship during the past two decades (cf. Special Issues/Volumes of this journal dedicated to HESD, for instance Dlouhá et al., 2013a; Ferrer-Balas et al., 2010; Lozano et al., 2013c; Lozano García et al., 2006), the conceptual and empirical knowledge about approaches specifically dedicated to the cause of promoting sustainable consumption among students remains rather limited.

The stream on higher education for sustainable consumption at the 4th UNESCO Chair Conference not only sought to underscore matters of sustainable consumption as a key theme on the HESD agenda, but also to stimulate an exchange on existing approaches, experiences and empirical insights. The resulting contributions in this Special Volume demonstrate the spectrum of possible access points to address the consumption issue in HESD efforts in the fields of campus, curriculum and community (cf. Müller-Christ et al., this volume).

A fairly well established approach to addressing consumption issues in HESD is to change operational practices in universities. Here, a common approach is to stimulate organisational and individual learning processes by engaging local actors in sustainability projects on campus (Albrecht et al., 2007). As three contributions in this Special Volume show, engaging with specific problems such as mobility (Hancock and Nuttman, this volume), energy consumption (Kastner and Matthies, this volume) or water usage (Bittencourt Marinho, this volume) can help to create a setting that allows not only for a more sustainable management of resources, but also for an educational engagement with sustainable consumption in a university community. The UK's sustainable schools programme focuses explicitly on eight different doorways, such as travel and traffic or energy and water as entry points for an engagement with ESD (UK-DfES, 2008).

An emerging theme is the development of interdisciplinary and transdisciplinary learning settings that go beyond the confinements of single disciplines and university boundaries to engage with real-world problems and allow for the acquisition and development of key competencies among students (Steiner and Posch, 2006). Possible formats to provide such learning settings range from comprehensive study programmes on a Master's level (Gombert-Courvoisier et al., this volume) to single courses offered on a Bachelor's level (Barth et al., this volume). A common feature of these contributions is the notion of integrating sustainability research, curricular teaching and campus development, and to link them to real-world projects that address consumption issues and involve different stakeholders.

The selection of papers in this thematic stream on consumption provides an overview of different models of good practice on and opportunities for linking formal and informal consumer learning. It invites and encourages contributions from other scholars and

practitioners in order to further enhance and validate the knowledge base on sustainable consumption as an underrepresented theme in the HESD debate.

2.3 Higher education for sustainable development in Central and Eastern Europe

Although the "Iron Curtain" between East and West Europe was demolished more than 20 years ago, relatively little is known about the status of ESD in the higher education sector of Central and Eastern European Countries (CEE; cf. categorisation by UNESCO, 2008: 12).The United Nations Economic Commission for Europe (UNECE) Strategy for ESD that was adopted in March 2005 in Vilnius, Lithuania, notes that special emphasis should be given to countries in South-Eastern Europe (SEE) and Eastern Europe, in solving their main problems in ESD, including "a lack of adequate instruction materials, the inefficient use of the capacity of higher education and research institutions, a shortage of skilled educators and insufficient awareness-raising, as well as a lack of interdepartmental and multi-stakeholder cooperation on ESD (UNECE, 2005: 12).

Since then, quite a few noteworthy sustainability-related initiatives have come into being (cf. Adomßent and Otte, 2013). That is why the rationale of this stream is to shine a light on various aspects of HESD in different countries of this region, exploring why it is – in this case from a geopolitical perspective – clearly justified to be characterised as an emerging area. The contributions to this stream show that the commonalities of these countries range from a legacy in terms of the environmental, social and economic burden inherited from their former communist regimes to the challenges posed by post-communist transition (Baker and Jehlička, 1998; cf. Cada and Ptácková, 2013) and, in many cases, by the integration process for aspiring EU members. Given the very rapid political changes after 1989 and the many claims on scarce resources and the at times bewildering need for creative thinking in order to adjust quickly to a rapidly changing environment, it is understandable that CEE governments and ministries of education have given relatively low priority to what they perceive (or better, misperceive) as a 'fashionable trend' (Dlouhá and Moldan, 2013).

In contrast, the need for greater recognition of ESD is acknowledged in the European Strategy for Sustainable Development (European Council, 2006) and its renewed version (European Council, 2009): "Education is a prerequisite for promoting the behavioural changes and providing all citizens with the key competences needed to achieve sustainable development. Success in reversing unsustainable trends will to a large extent depend on high-quality education for sustainable development at all levels of education (…)" (European Council, 2006: 22). Education and training provide a critical foundation underpinning sustainable development. Thus, the European Commission encourages member states in their efforts to develop strategic approaches to sharing knowledge and good practice in a bid to stimulate ESD (DG Education and Culture, 2008).

Against this background, in order to understand which conditions promote or thwart endeavours of ESD in higher education on the macro level (Kohoutek, 2009; cf. Balázs et al., 1995; Adomßent, 2012), it is essential to analyse educational policies so as to understand their relationship to the performance of higher education institutions (Stephens and Graham, 2010; Välimaa, 2008; cf. Grindsted, 2011; Grindsted and Tove, 2012). However, there is still a need for basic research in this area (Wals, 2009; cf. Yarime et al., 2012). Two contributions in this Special Volume exemplify this tension. The case of Poland represents how current EU policy and strategy plays a huge role in promoting sustainability advances in new EU member states (Koscielniak, this volume). The case of Serbia, a non-EU country in line for accession, also demonstrates how pre-accession alignment with EU policies might help to fill the vacuum in environmental, sustainability, and related higher education policy (Milutinovic, this volume).

Given the fact that all the former communist CEE states share a number of barriers to greater adoption of ESD (cf. Dlouhá and Moldan, 2013: 23), the meso level is of special interest in processes of transformation because higher education institutions can serve as workshops for the future of social and human development (cf. Dlouhá et al., 2013; Gruppe 2004, 2004; Stensaker et al., 2006). It is therefore important to "mobilise the core functions of universities: teaching, research and community engagement to strengthen global and local knowledge of Education for Sustainable Development", as stated in the Bonn Declaration (UNESCO, 2009).

Since the incorporation of ESD into CEE curricula is poorly documented, two hands-on examples from the Czech Republic and Bulgaria might be able to shed more light on this academic field of action. Both cases involve severe environmental degradation that was exacerbated in many areas as a consequence of the very rapid political changes after 1989. One example depicts the evolution of teaching and supporting the sustainability paradigm in a devastated coal-mining area (Labadova et al., this volume), the other relates to shifts in urban planning education in the course of societal changes in urban areas (Dimitrova, this volume). In both cases the aims and approaches are in line with general classification schemes and lists of preferred learning outcomes relevant for engineering ESD, as addressed by Kastenhofer et al. (2010).

Altogether, all of the contributions seek to provide an insight into the emergent CEE region (cf. Holmberg and Samuelsson, 2006) and so further our understanding of the drivers and barriers for implementing ESD in a geographical area that has been till now little investigated.

Besides the three thematic streams, on the last day of the conference, three roundtables (RT) were held to discuss what contributions universities can make to promote sustainable development in the fields of "Campus", "Curriculum" and "Community". The Campus RT highlighted, for instance, the role of communication, the importance of engaging all university members, including senior administration officials, and the value of acting as a role model of sustainability for neighbouring communities; the Curriculum RT discussed, among other aspects, the relevance of windows of opportunity, external pressure and internal drivers; whereas the Community RT stressed the significance of universities as meeting places, the engagement of students with the real world and the expansion of quality criteria as well as quality assurance (Müller-Christ et al., this volume).

3. Conclusions

The reflections in this Special Volume on three areas generally underrepresented in the HESD debate show that HESD has become a differentiated research field with a wide variety of disciplinary focuses, thematic approaches as well as regional approaches. This allows on the one hand for a more focussed debate and for progress in these different areas of HESD research. On the other hand, it is a challenge to relate the different disciplinary, thematic and geographic discourses to each other and to link them back to the general HESD discourse. The latter is necessary, for instance, for identifying overall learning objectives or defining common quality standards.

The contributions to the three thematic streams of this Special Volume provide complementary conclusions that can serve as bases for educators, managers and other stakeholders to engage with HESD:

- *Management education* institutions are beginning to move towards accepting the broader responsibilities of management in society, and business schools / faculties have recently made significant progress on preparing today's students and

tomorrow's leaders for future market realities by equipping them with sustainability perspectives required for socially responsible business. The insights drawn from the papers are valuable to lecturers and other teaching staff interested in the integration of sustainability in their teaching; teaching directors, deans and other senior staff who continue to make strategic decisions about their own teaching programs; and policy makers interested in the promotion of responsible management education.

- HESD needs to address students in their roles as consumer citizens. This relates not only to private consumer behaviour with immediate impacts on the environment and society, but expands traditional concepts of the consumer to include more civic spheres of action such as participation in boycotts or "buycotts" or exerting political influence (cf. Fischer and Barth, 2013). The papers collected in the thematic stream showcase different fields of action for practitioners in HESD to conceptualise *sustainable consumption* as a priority issue in research, education, operations and community outreach that requires strategic leadership.
- The case of *Central and Eastern European countries* highlights the importance of thorough policy studies, both on country and supranational level. As many examples showcase, strong influence to strengthen ESD within countries is often exerted by the environmental sector – in quite a few cases with much more effect than the educational level. When deep reaching political overthrows like in the CEE region take place, education (and together with it all social sciences) may even come under suspicion of collaboration with the overthrown regime, thus turning education as a topic into a minefield. At the same time, supranational power can be a productive driver as the stepwise adoption of the acquis communautaire (European Community acquis) clearly shows. Similar processes at the interface of culture and policy-making can be observed in other parts of the world, e.g. in Latin America where the indigenous peoples' (cosmo-)vision of Buen Vivir (good living) exerts a growing influence on key policies in some countries (cf. Radcliffe, 2011).

With regard to research, the discussion in this Special Volume provides evidence that the following areas are of particular importance for future research in HESD:

- *Measuring learning outcomes:* For instance, in management education and education related to consumption, there is a broad debate about competence concepts and about which teaching and learning approaches help students develop competencies. However, there is still only very limited research on learning outcomes. Do students really develop the competencies we want them to develop? Are teaching and learning approaches really effective? There is still much research to be done to operationalize competencies and develop instruments for assessing and monitoring competence development.
- *Accounting for different geographical, political and cultural contexts for HESD:* In HESD research published in international peer-reviewed journals there is a strong focus on developments in such countries as the USA, the United Kingdom, Australia, Canada, Sweden, Spain, Japan, and Germany (Barth and Rieckmann, 2013; cf. Karatzoglou 2013). We still have much to learn about Central and Eastern Europe, and we know even less about HESD in African, Asian and Latin-American countries. Conducting more research in these – so far underrepresented – regions will help us to better understand the relevance of different contexts as well as general drivers and barriers for implementing HESD. Generally, this research might also contribute to clarify and differentiate the concept of sustainable development.

- *Understanding organisational change processes:* The papers give insights into approaches to make higher education more sustainable and how to transform teaching. This work should be a basis for further research, not only regarding competencies that are needed for future decision makers, but also about organisational aspects such as the interaction between individual units or faculties and their relationship with the wider university. This could improve our understanding of how "innovating units" (business school, faculty, working group etc.) interact with the overall organisation or other subunits, how they organise themselves and balance internal and external pressures (e.g. stakeholder expectations and university goals).

Finally, it can be concluded that HESD has not only gained importance in different fields of research, but also in different areas of educational practice. In all likelihood the UN Decade for ESD has contributed considerably to this development. In this context, the question is which consequences the end of the Decade (2014) will have for HESD in general, but also for the specific developments in different areas and disciplines described in this Special Volume. One crucial sphere for the future promotion of HESD will certainly be the elaboration and implementation of the Rio+20 Sustainable Development Goals (SDGs)[1].

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[1] At the Rio+20 Conference in 2012 in Rio de Janeiro the member States agreed to launch a process to develop these goals which will build upon the Millennium Development Goals and converge with the post 2015 development agenda.

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