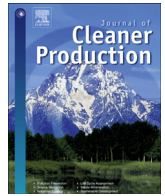




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# University contributions to environmental sustainability: challenges and opportunities from the Lithuanian case

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## ABSTRACT

Higher education plays an important role in shaping an ecologically sound society. By greening the campus, initiating internal and external policies and activities, and including all stakeholders in the educational process, universities can contribute to environmental awareness and behaviour and, in turn, to environmental sustainability. Research in Central and Eastern European countries in this field is rather limited; moreover, there is a lack of resumptive methods evaluating university contributions to environmental sustainability. Thus, the aim of this study is to evaluate sustainability opportunities at Vytautas Magnus University, Lithuania. The results of this study show that environmental courses for all students might be of importance, especially when trying to reach students who are not environmentally committed. Regarding the university's official policies, analysis shows that the university is still in the early phases of building consistent policies for environmental sustainability. Furthermore, intentions are quite often "locked in". Thus, university policies promoting environmental sustainability must be more consistent and continuous, rather than fragmented and occasional.

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## 1. Introduction

Environmental education and information provision is one of the most important tools for sustainable development (Tukker et al., 2008; Jackson, 2009; Musti et al., 2011). This is widely acknowledged by various international and regional policies (Lozano et al., 2013). Motivated by Agenda 21 and the work of UNESCO's Education for Sustainable Development (2005–2014), the "green universities" movement has broadened to encompass a wider agenda for sustainable development education (Thomas, 2009). As stated by Wang et al. (2013), "an ecologically sound society requires strong support from higher education institutions". Moreover, the environmental education of young people is the most important, as they are the main drivers for a more sustainable future, particularly of students who will occupy high offices (Green, 2013; Zsóka et al., 2013). Additionally, "graduates who understand and implement holistic and trans-disciplinary approaches that address the four dimensions of sustainability (economic, environmental, social, and time) and their interrelations" are needed (Lozano et al., 2013, p. 140). The

contributions of universities to sustainable development might be achieved through education, research, university operations and community engagement (Cortese, 2003), applying environmental management systems (EMS), public participation and social responsibility, and sustainability teaching and research (Alshuwaikhat and Abubakar, 2008).

The role of higher education in sustainability provisions has been widely discussed. A variety of case studies present different aspects, benefits and obstacles for university input to sustainable development (Cortese, 2003; Davis et al., 2003; Lozano, 2006; Lehmann et al., 2009; Brinkhurst et al., 2011; Lozano et al., 2013; Peer and Stoeglehner, 2013; and many others). These are mainly examples from developed countries, with some cases from emerging and developing countries (for example, Wang et al., 2013; de Castro et al., 2013; Jain et al., 2013). However, research on education for sustainable development in transition countries in Central and Eastern Europe is rather limited (Grabovska and Grabowski, 2009; Zsóka et al., 2013; Kościelniak, 2014; Zdanytė et al., 2014; Dagiliūtė and Niaura, 2014). This might be a result of the political, economic and social transformations these countries have experienced in a rather short time period (Juknys et al., 2008). Additionally, all of these countries must simultaneously address the transition to sustainability (Mżavanadzė, 2009), which is often a cultural and social challenge (Kościelniak, 2014).

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Despite their importance for a country's development, like many other institutions, universities are only at the beginning of their path to a more sustainable mode, creating new traditions and overcoming a lack of environmental and sustainability considerations in their performance. However, not much has been done to the formal education systems in Lithuania and other CEE countries. As Grabovska and Grabowski (2009) indicated in the case of four Latvian institutions of higher education, none of them had the terms “sustainable development” or “education for sustainable development” in their strategic documents. Nevertheless, sustainability-related activities included collaboration with NGOs, membership in international organizations (for example, Environmental Management for Sustainable Development), curricula and various research projects related to the environment or sustainability. The authors concluded that international cooperation on education for sustainable development is much better expressed than local initiatives. Therefore, there is still a demand for more comprehensive assessments, research and experience exchange in CEE countries (AdomBent et al., 2014) to achieve a significant contribution to sustainable development in countries' educational systems.

Considering that there is a lack of research or resumptive evaluations of university contributions to environmental sustainability in Central and Eastern Europe (CEE), the aim of this study is to evaluate contributions to environmental sustainability, needs and opportunities for improvement at Vytautas Magnus University (VMU), Lithuania. The study includes the university's academic system, with a short overview of the curriculum, and its contribution to the promotion of environmental awareness and behaviour. Moreover, this study presents a review of the university's internal and external activities, which are essential to the creation of a sustainable society within universities and their regions. Based on these results, the study provides suggestions for policy makers and university leaders for setting priorities for university contributions to sustainability.

Thus, the rest of the paper proceeds as follows. The paper starts with a review of the literature. In Section 3, the research approach and methodology are presented. Section 4 presents the main results, followed by a discussion and some recommendations (Section 5). The last section closes the paper with the main conclusions.

## 2. Overview of the role of the university in sustainability provisions

Overall, universities are expected to engage in sustainability both internally (as an organization) and externally (as an agent in the region). As summarized by Kościelniak (2014), this covers the university's mission, education and research, administration of the university, external stakeholders (regional mission), and personal activities of academic community members. The experiences of green universities in emerging countries (Wang et al., 2013) indicated some common factors for progress: collaboration with local governments, effective leadership, stakeholder inclusion in strategic planning, safeguarded funding, transformation of the curriculum and administrative structure towards sustainability, and the greening of the campus. These have been discussed as more or less underpinning factors in most of the studies examining sustainability issues in higher education (Davis et al., 2003; Cortese, 2003; Čiegis and Gineitienė, 2006; and others). Some of the studies present different universities' rankings and ranking tools (like UI GreenMetric – see Suwartha and Sari, 2013) or assessments of curriculum sustainability (Lozano and Young, 2013). Some of the case studies focus on campus sustainability and participation (see Brinkhurst et al., 2011) or the role of participation in sustainability assessment (see Disterheft et al., 2012). Some studies drive

attention to the universities' commitment to sustainability (for content analysis, see Lee et al., 2013) and the expression of these commitments in the curriculum content (Green, 2013) and learning outcomes (Mintz and Tal, 2013). The contribution of curricula to environmental knowledge and promotion of students' environmental awareness, which are the main drivers of environmentally friendly behaviour, is also acknowledged and analysed (see Zsóka et al., 2013; Vicente-Molina et al., 2013). The role of the university as a catalyst of transformations in the region is addressed as well (Wells et al., 2009; Trencher et al., 2013; Hancock and Nuttman, 2014).

The sustainability of a university as an organization refers, first and foremost, to the policy and planning of resource allocation and commitments to sustainable development (Lee et al., 2013). The lack of a sustainability policy and commitments often lead to limited financing (Velazquez et al., 2005) and motivation (Lee et al., 2013) in institutions of higher education. Therefore, a clear commitment to sustainability is required in an institution's mission, vision, goals, and strategic documents (Davis et al., 2003).

Secondly, the sustainability of a university as an organization refers to the sustainability of the campus. Campus sustainability generally covers operational issues regarding energy, water consumption, emissions, waste management, materials, food services, green spaces and transportation and so on (Brinkhurst et al., 2011; Suwartha and Sari, 2013). A case study on UI Green Metric ranking results (Suwartha and Sari, 2013) concluded that energy and climate change were prevailing issues in university improvements. However, changing travelling habits was not as easy. In the case of Deakin University, Australia, cooperation was fostered among stakeholders and some transport services were altered (Hancock and Nuttman, 2014).

One of the ways to move towards sustainable development is to use environmental management systems (EMS), which can be certified for ISO 14001 and EMAS (EU Eco-Management and Audit Scheme). Universities having ISO 14001 certification were more likely to see the institution's image as a driver for EMS and to apply a “top-down” approach, rather than encouraging participation (Disterheft et al., 2012). Nevertheless, campus sustainability influences all other parts of the university system; therefore, the whole picture should be considered and interdependence should be taken into account (Cortese, 2003). Disterheft et al. (2012) also indicates that EMS is only one of the components needed to enhance sustainability on campus. According to these authors, EMS implementation should evolve not only in a “top down” manner, but should also be combined with the participation of students, faculty and staff, thus using the “bottom up” approach. This would allow the university to overcome one of the main obstacles to campus sustainability – the lack of awareness. Student initiatives are catalysts for new ideas and may push some policy changes and processes (Brinkhurst et al., 2011).

Curriculum and research is another area where a university could contribute to sustainable development and enhance students' environmental awareness. For a start, curriculum assessment could provide university leaders with information and direction on the changes needed (Lozano et al., 2013; Watson et al., 2013). The integration of sustainability issues might be vertical or horizontal, as summarized by Watson et al. (2013). Vertical integration usually comprises the inclusion of specific sustainable development courses in the curriculum, while horizontal integration is the inclusion of sustainability topics in already existing courses (Ceulemans and De Prins, 2010). Horizontal integration could be an option for teachers in institutions with low administration commitment and support (Ceulemans and De Prins, 2010). The number of course credits and number of students attending might be useful data points for planning and introducing changes

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