UNIVERSITIES SUSTAINABLE DEVELOPMENT

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Abstract: Knowledge is a key factor for sustainable development. Yet without the appropriate context and applications, knowledge cannot successfully catalyze sustainable development. Therefore education should be considered as an enabling infrastructure for all sectors of the economy, for democracy and for good governance. The challenge for higher education is to innovate traditional learning environments and learning processes in such a way that they not only support the learning process of children and young adults in formal education, but life-long learning, training and informal learning as well. Higher education institutes are challenged to cooperate together in networks that constitute a supportive infrastructure for life-long learners. Cooperation between universities is not enough, however. In order to fulfill their service function at regional, national and international levels as well, universities and higher educational institutes will have to be active nodes in international/national/regional networks with other partners such as primary and secondary schools, vocational education, science centers, small and medium sized companies, chambers of commerce, non-governmental organizations and national /regional governments. Universities are committed to transforming itself from an institution characterized by significant areas of achievement and excellence in sustainability adherence and provision to an institution modeling universities-wide achievement and excellence and, therefore, positioned to make a significant contribution to national and international efforts to embed sustainability in higher education.

Key words: *universities, sustainable development, globalization, international commitments, formal/informal learning, national/regional government, networks*

INTRODUCTION

The term "sustainable development" is subject to many different interpretations and definitions. It is not the purpose or the intention of this paper to discuss the basis of sustainable development at length. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs[3]. The

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[3] Brundtland Report Our Common Future (1987): "Report of the World Commission on Environment and Development", United Nations, available at: www.un-documents.net/wced-ocf.htm.

United Nations World Summit[4] affirmed the concept of three 'pillars' of sustainability: the economic, social and environmental factors that need to be taken into consideration, and their cultural context. There is increasing recognition that these three factors are interconnected, overlapping and interdependent. Drawing on both the 1987 definition and its 2005 recalibration, the present paper defines education for sustainable development as follows: Education for sustainable development is the process of equipping students with the knowledge and understanding, skills and attributes needed to work and live in a way that safeguards environmental, social and economic wellbeing, both in the present and for future generations. Education for sustainable development means working with students to encourage them to[5]:

- Consider what the concept of global citizenship means in the context of their own discipline and in their future professional and personal lives,
- Consider what the concept of environmental stewardship means in the context of their own discipline and in their future professional and personal lives,
- Think about issues of social justice, ethics and wellbeing, and how these relate to ecological and economic factors,
- Develop a "future-facing" outlook, learning to think about the consequences of actions and how systems and societies can be adapted to ensure sustainable futures.

As societies and economies develop, higher education providers face the challenge of ensuring that graduates are equipped to meet rapidly changing demands. As a recent European Commission report on Modernizing Higher Education in Europe states: higher education institutions are the focal points for imparting what is known, interrogating what is not, producing new knowledge, shaping critical thinkers, problem solvers and doers so that we have the intellectual muscle needed to tackle societal challenges at every level necessary and advance European civilization[6].

Students may already be familiar with education for sustainable development through secondary and further education, though not necessarily having encountered it by that name. Education for sustainable development encourages different disciplines to enter into dialogue, make connections, share knowledge, and work together on emergent areas. It aims to develop students ability to understand and evaluate connections between big issues, such as inequality, public health, global consumption, biodiversity loss and the limits of natural systems. Learning for and about sustainable development aims to prepare graduates to be able to contribute to, stimulate and lead the debate

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[4] United Nations World Summit (2005): "2005 World Summit Outcome", available at: www.un.org/en/ga/search/view_doc.asp.

[5] Drayson, R; Bone, E; Agombar, J; Kemp, S (2013): "Student attitudes towards and skills for sustainable development", York: Higher Education Academy, third edition, available at www.heacademy.ac.uk/resources/detail/sustainability/2013

[6] European Commission High Level Group on the Modernization of Higher Education (2013): "Improving the quality of teaching and learning in Europe's higher education institutions", report to the European Commission.

on complex issues such as what constitutes global citizenship and good governance, sustainable resource use, and the determination of ecological limits. Education for sustainable development is "future-facing" in the sense that students are encouraged to think about current and emergent and future situations, relevant to their studies, and in so doing gain a wider socioeconomic and environmental perspective on the relevance of their work. Being open to a range of other areas of expertise and banks of knowledge, outside their immediate discipline, through both formal and informal learning environments, is a fundamental feature of education for sustainable development[7].

OBJECTIVES

The principal aim of this review was to establish how higher education in different national educational systems can optimize contributions to sustainable development. The objectives of the universities sustainable development strategy were:

1. To identify and communicate good practice case studies in universities teaching and research, community relations and institutional management.
2. To establish visions of the universities development strategy and to optimise its contribution to sustainable development.
3. To look at areas where policy solutions may be needed to support universities contribution to sustainable development.

UNIVERSITIES AS ACTORS IN SOCIETY

Globalization has spurred technological, economic, social and cultural change as well as the greater mobility of capital, technology, information and labour. This phenomenon has created a growing demand for society's capacity to acquire, process, disseminate and apply knowledge. Universities, as important centers of research and learning, play an important role in this context. In addition to fundamental research, universities also have to undertake innovative, action-oriented research[8]. They should be particularly attuned to the provision of appropriate knowledge and skills relevant for sustainable development to the local community as local knowledge centers. In addition to their traditional teaching functions, universities must consider their role in retraining school teachers as well as other local professionals to contribute to learning for sustainable development. Universities are important

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[7] Cortese, A.D. (2003): "The Critical Role of Higher Education on Creating a Sustainable Future", Planning for Higher Education, March-May; Sedlacek S., (2013): "The Role of Universities in Fostering Sustainable Development at the Regional Level", Journal of Cleaner Production, 48, 74-84.; Cade, A. (2008): "Employable graduates for responsible employers" - Research on the links between sustainability and employability in the graduate job market in relation to higher education teaching and learning - the Higher Education Academy, Student Force for Sustainability, London.

[8] Elkington, J. (1994), "Towards the sustainable corporation: Win-win-win business strategies for sustainable development", California Management Review, Vol. 36, No. 2, pp. 90-100.; Forum for the Future (2003): "Reporting for Sustainability: Guidance for Higher Education Institutions", Forum for the Future, London

actors in the community, as employers, purchasers and service users; they are also businesses where prudent use of resources saves money and safeguards reputations. Thus, universities can be perceived as models for society in the pursuit of sustainable development.

Universities are expected to contribute to innovation, to contribute to reflection on values and ethics, and to contribute to the transformation to a more sustainable society. The provision of knowledge as a "public good" is one of the tasks of higher education, and unhindered access to knowledge is a prerequisite for sustainable development. Of particular importance are qualitative factors imparted by the education system, such as orientation towards innovation and learning, creativity and the willingness to take risks. In considering the roles and functions of the university in promoting sustainable development, following issues should be particularly addressed[9]:

- Increasing the relevance of teaching and research for the societal processes leading to more sustainable and discouraging unsustainable patterns of life,
- Improving the quality and efficiency of teaching and research,
- Bridging the gap between science and education, and traditional knowledge and education,
- Strengthening interactions with actors outside the university, in particular with local communities and businesses,
- Introducing decentralized and flexible management concepts.

UNIVERSITIES AND KNOWLEDGE TRANSFER TO SOCIETY

Societal problems are almost always complex problems that ask for multidisciplinary approaches. The challenge for higher education institutes is to create rich learning environments that prepare learners for their roles in society. Through the processes of education, outreach and service to community and region, universities and other higher education institutes constitute bridges between knowledge generation and application of this knowledge in society. This bridging function is of great importance for innovation, development and creation of welfare.

The learning environments created in higher education should enable learners to understand their physical and social environment; to develop a positive attitude towards cultural, environmental diversity, and life-support ecological processes; and to use their knowledge and attitude in a way that is responsible with respect to the well-being of their own society, other societies and of the planet as a whole[10].

Higher education should not only critically reflect on learning environments and learning processes for students studying for their first degree in higher education, they should also reflect on their role in creating an infrastructure that supports and enhances life long learning processes.

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[9] Jones, P, Selby, D, and Sterling, S, ed. (2010): "Sustainability Education: Perspectives and Practice across Higher Education", Earthscan.

[10] Tilbury, D and Ryan, A (2013): "Leading Curriculum Change for Sustainability", Guide to quality and education for sustainability in Higher Education.

Higher education has a specific place within the educational system because it constitutes the learning environment for all educational professionals including those for primary and secondary education. Therefore it is important that the learning environments for educational professionals provide a source of inspiration for the development of innovative learning processes as well. For that purpose, the opportunities offered by new media and information/communication technology certainly deserve attention[11].

INTERNATIONAL COMMITMENTS

Universities and higher education institutes can contribute to sustainable development in several ways[12]. First, by giving sustainable development a place in all university curricula and educational and research programs. By generation and dissemination of knowledge, the university's core competences, they provide literacy on sustainable development to all professionals. Their graduates should be responsible citizens capable of responding to the challenges of sustainable development. Universities can also play a role in reorienting educational programs at primary, secondary and vocational education. Teacher retraining might be an important role that universities can play. Second, by playing an important role as local knowledge centers for sustainable development in order to help society meet the challenge of sustainable development at the local level. Third, by making sustainable development a leading principle in their own logistics and managerial processes.

These three dimensions form the core of several declarations adopted by university networks in the passed decade:

> The University Charter for Sustainable Development (Copernicus Campus),
> The Talloires Declaration (Association of University Leaders for a Sustainable Future, ULSF) ,
> The Kyoto Declaration (International Association of Universities, IAU),

> - The Halifax Declaration, adopted during Conference on University Action for Sustainable Development in Canada,

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[11] Sterling, S, Maxey, L and Luna, H (2013): "The Sustainable University: Progress and prospects", Routledge.

[12] Sterling, S, Maxey, L and Luna, H (2013): "The Sustainable University: Progress and prospects", Routledge.; Cleveland, C.J. and I. Kubiszewski (2007), "United Nations Conference on Environment and Development (UNCED)", Rio de Janiero, Brazil, Encyclopedia of Earth, Retrieved 16 March 2009.; HEFCE (2009), "Sustainable development in higher education: 2008 update to strategic statement and action plan", Policy development, Statement of policy, Higher Education Council for England, Bristol.; OECD. (2009): "Green at fifteen: How 15-year-olds perform in environmental science and geosciences in PISA 2006". OECD, Paris.; HEFCE (2013): "Sustainable development in higher education: Consultation on a framework".; Talliores Declaration (1990): "Talloires Declaration", Presidents Conference, France, http://www.iisd.org/educate/declarat/talloire.htm, date accessed January 18, 2015.

- The Rio Declaration,
- The Thessaloniki Declaration; adopted by the International Conference on Environment and Society-Education and Public Awareness for Sustainability in Greece,
- The Lüneburg Declaration on Higher Education for Sustainable Development.

UNESCO's role, for example, was to built partnerships with governments, civil society groups and other United Nations and international agencies to meet important education and literacy targets. UNESCO has a dual role in relation to education for sustainable development[13]:

- As **a substantive implementer of higher education reforms** and coordinating activities of multiple stakeholders to implement education sustainable development at international, regional and country levels,
- As **the lead agency in the promotion of education sustainable development** (2005-2015).

These Decade offers an opportunity for UNESCO and its partners to advance progress made in human resource development, education and training to promote a more sustainable development of our global society.

Another example of the co-operation, as well as innovative uses of information technology, is the Global Higher Education for Sustainability Partnership (GHESP) Resource project that could be described as a portal to qualified good practices along the lines of higher education's contribution to sustainable development (curricula, logistics and managerial practices and service to society) and the formation of a global network of Regional Centers of Excellence (RCEs) for sustainable development Learning. Such regional centers should organize their activities locally:

- at **enhancing collaboration** between different levels of formal education, i.e. between primary, secondary and higher education,
- at **facilitating relations** between formal education and local actors relevant for ESD, such as research centers, local businesses centers and local governments.

HIGHER EDUCATION SUSTAINABLE STRATEGY

Sustainable development strategy is still a very comprehensive and challenging issues regarding higher education reform in developed, but also, in developing countries. Because of that, universities wanted to engage in the learning and planning process rather than delivering specific outputs. Higher education institutions have conceived of three strategies for delivering the organizational visions[14]:

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[13] Sterling, S, Maxey, L and Luna, H (2013): "The Sustainable University: Progress and prospects", Routledge.; UNESCO, Nagoya, Japan (2014): "Aichi-Nagoya Declaration on Education for Sustainable Development".

[14] Organisation for Economic Cooperation and Development (2007): "Higher Education and Regions: Globally Competitive, Locally Engaged", OECD, Paris.

1. **The first strategy** is to employ some type of assessment, either through peer review or a strategic evaluation. Peer review backed up by a robust rigorous evaluation was popular because it is transparent, reflexive and enabled universities to learn in a safe space. This strategy facilitates concise assessment and feedback to the process.
2. **The second strategy** is concerned with the process, so that the higher education institutions actually participates in transformation. This method concentrates on defining clear action plans, frameworks and targets. By articulating objectives, standards and policies in a formal and concise statement can help facilitate the integration of those values and realization of the objectives.
3. **The third strategy** is concerned by adapting initiatives to the unique situation of each universities and/or higher education institutions generally.

There is interaction between the three strategies and universities are encouraged to adopt multiple modes of delivery to ensure that sustainable development is adequately implemented. There is always a concern of being able to translate written policy into actual practice. However, developing strategies for concrete implementation can quell concerns about an higher education institution's ability to deliver sustainability[15].

An analysis of the different universities development strategy suggestions reveals that they have three distinct audiences and suggests that targeted action from the following bodies and actors:

<div align="center">

NATIONAL LEGISLATURE
EXECUTIVE LEVEL
UNIVERSITIES THEMSELVES

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In addition to these three targets, it is useful to also consider these suggestions in the light of the most common barriers and opportunities and the areas of the strategic action. This will offer a way of prioritizing and/or focusing the higher education policy and research agenda, as well as aligning the obstacles and prospects.

Several authors find that government intervention, at any level, in sustainable development education is integral for reform and subsequent adoption of sustainable development principles. Specifically, government can work with higher education institutions in a range of areas to develop policies, research agendas and regional commitments, but also to provide incentives and apply political pressure[16]. Policy suggestions for the executive include:

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[15] Barth M., Michelsen G., (2013): "Learning for Change: An Educational Contribution to Sustainability Science", Sustainability Science, 8 (1), 103-119.; Lozano R., Ceulemans K., Alonso-Almeida M., Huisingh D., Lozano F.J., Waas T., Lambrechts W., Lukman R., Hugé J., (2014): "A review of commitment and implementation of sustainable development in higher education: results from a worldwide study". Journal of Cleaner Production, 1-18.; Mader C., Scott G., Razak D., (2013): "Effective change management, governance and policy for sustainability transformation in higher education", Sustainability Accounting Management and Policy Journal, 4 (3), 264-284.

[16] Hopkins, C. and R. McKeown (1999), "Education for Sustainable Development", FORUM for Applied Research and Public Policy, Winter, pp. 25-29.;

> ➢ Providing national coordination and support network,
> ➢ Financing pilot projects,
> ➢ Improving dissemination by initiating a public awareness raising campaign,
> ➢ Requiring universities to develop sustainable development implementation plans,
> ➢ Building the capacity of civil servants and university leaders,
> ➢ Rewarding good practice especially amongst academics.

There are three types of actions that might prompt the universities to be proactive in sustainable development. Policy suggestions for the universities with specific advantages in the sustainable development strategy activities include[17]:

A. Engaging in **peer review** will help build strong mutually beneficial collaborations, start to share learning across networks and hold universities to account. Establishing guidelines and targets, and then periodically reviewing them will ensure policies are implemented and progress being made.

B. Establishing **professional recognition** for staff engaged in sustainable development research. Teaching or managing and valuing inter-disciplinary research will help to break down the academic silos. Engaging staff will help develop internal advocates who place pressure on higher-level administrators to act and also to create a culture of sustainability.

C. Building the **capacity of university leadership** from the principal to heads of departments and then staff and students will ensure that strategic initiatives are implemented and that demand for sustainability from students is well informed and positive. Presidents and deans should commit their institutions to a set of tangible objectives, and these objectives should be clearly announced to students, staff and faculty in order to develop multi-level commitment to the ideas.

CONCLUSIONS

Universities can be a key reference in technology for sustainable development on a local, regional, European and global level through their contribution to higher education as well as research, development and innovation. Higher education institutions will achieve this by:

- Having a clear universities action plan for sustainable development,
- Ensuring that all staff act sustainably and all students have the capacity to implement sustainability in the work and private life,
- Promoting regional universities sustainable development,

Mader C., Rammel Ch., (2014): "IAU Global Survey on HESD – First insights on the state of higher education for sustainable development study", IAU Horizons, 20 (2), 16.

[17] Rammel Ch., Velasques L., Mader C., (2015): "Sustainability Assessment in Higher Education: What and How?" In: Mathias Barth, Rieckmann M., Michelsen G. and Thomas I.G., Routledge Handbook of Higher Education for Sustainable Development, Routledge.

- Maximizing its global responsibility and leadership role in less developed countries, by facilitating knowledge transfer, capacity building and increasing the mobility of staff and students,
- Integrating environmental, social, economic and ethical aspects into all teaching and research,
- Broadening the spectrum of disciplines contributing to research into sustainable development,
- Building a reputation for integrity about sustainable development,
- Developing intellectual leadership in specific areas.

ODRŽIVI RAZVOJ UNIVERZITETA

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Apstrakt: Znanje predstavlja ključni faktor održivog razvoja, ali bez odgovarajućeg konteksta i aplikativnosti ono ne može sa uspehom da ubrza i podrži procese održivog razvoja. Zbog toga bi obrazovanje trebalo posmatrati kao značajnu infrastrukturu za sve sektore ekonomije, za demokratiju i za dobro upravljanje sistemima. Prednost visokog obrazovanja je u stalnom inoviranju tradicionalnih procesa učenja i njihovog okruženja tako da ne podržava samo procese formalnog obrazovanja, već takođe i procese doživotnog usavršavanja, treninga i neformalnog učenja. Takođe, izazovi za institucije visokog obrazovanja nalaze se u međusobnoj kooperaciji u cilju izgradnje mreže visoko-obrazovnih institucija koje mogu da obezbede potrebnu infrastrukturu za doživotno obrazovanje i usavršavanje. Pri tome, kooperacija između univerziteta sama za sebe nije dovoljna. Univerziteti i druge institucije visokog obrazovanja, da bi u potpunosti ispunili svoju obrazovnu funkciju na nacionalnom, regionalnom i internacionalnom nivou, moraju postati aktivna čvorišta nacionalnih, regionalnih i internacionalnih obrazovnih mreža, zajedno sa drugim partnerima kao što su osnovne i srednje škole, karijerni centri za profesionalnu edukaciju, naučno-istraživački centri, mala i srednja preduzeća, privredne komore, nevladine organizacije i nacionalne/regionalne vlade sa njihovim institucijama. Univerziteti bi se trebali transformisati od institucija koje karakterišu isključivo naučna i obrazovna dostignuća iz određene oblasti sa težnjom održive izvrsnosti i ispunjavanja zakonskih odredbi u institucije sa šire modeliranim obrazovnim dostignućima i obrazovnom izvrsnosti kako bi se pozicionirali kao signifikantan faktor održivog razvoja u visokom obrazovanju na nacionalnom i internacionalnom nivou.

Ključne riječi: *univerzitet, razvoj, održivi razvoj,, globalizacija, internacionalni dokumenti, nacionalni dokumenti*

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