

# “Sustainable universities - from declarations on sustainability in higher education to national law”

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## Sustainable universities – from declarations on sustainability in higher education to national law

### Abstract

Declarations on Sustainability in Higher Education (SHE) can be viewed as a piece of international regulation. Over the past 30 years research at universities has produced convincing data to warn about deterioration of the environment, resource scarcity and the need for sustainability. This in turn, has put a counter pressure on the university, forcing it to review its role as a driver for sustainable development. Today, universities and intergovernmental institutions have developed more than 31 SHE declarations, and more than 1400 universities have signed a SHE declaration globally. However, it is well known that signing a declaration does not necessarily lead to implementation. This is due to the lack of incentive structures. The article examines the discursive interaction between university and intergovernmental declarations that form the basis for the design of sustainable universities. Declarations tend to have impact on three trends. Firstly, there is emerging international consensus on the university's role and function in relation to sustainable development; secondly, the emergence of national legislation, and thirdly, an emerging international competition to be leader in sustainable campus performance.

**Keywords:** Sustainability in Higher Education Declaration, sustainable university, sustainable university performance, university ranking, sustainability in higher education law.

**JEL Classification:** Q01, Q50.

### Introduction

The first declaration of sustainability specifically targeted at higher education was made by the university sector in 1990. Prior to the emergence of specific sustainable university and Higher Education Declarations, the Tbilisi Declaration and a number of intergovernmental conferences form the background for the later development [12]. According to our data, a total of 31 SHE declarations have emerged, of which 15 have been made by the university sector and 16 by intergovernmental institutions, mainly UNESCO. In total, more than 1400 universities worldwide have signed a SHE declaration. Several studies show, however, that signing a declaration does not necessarily lead to implementation of the declaration's principles of sustainability, and that universities have either found itself unable to implement the declaration's principles or have not made efforts towards their implementation (Clugston et al., 1999; Wright, 2002, Lidgren et al., 2006, Bekessy, 2007; Alshuwaikhat et al., 2008): "it is widely known that the adoption of sustainability declarations (...) does not necessarily translate into the implementation of their basic commitments" [2].

Despite implementation difficulties, the declarations have influenced universities' decision making in various ways (Clarke, 2009; Wright, 2004). Clarke stresses that the SHE declarations are important because they form the basis for the formulation of individual sustainability policies at universities: "Declarations are also used as a complement to a university policy" [4], and commit a university (and particularly

a President or Chancellor) to environmental management. Weenen (2000), Lidgren (2006) and Alshuwaikhat (2008) highlight the political signal value of SHE declarations: "Some universities have also voluntarily signed some declarations to indicate their commitments to sustainability" [1], but they also stress the danger of greenwashing as a result of free media publicity and recognition that will be gained before implementation takes place. It simply "lacks an implementation strategy, a monitoring process, and close guidance from the signatory secretariat" [2]. Declarations are criticized for not stipulating measures to ensure comparability and for the lack of incentive structures to develop institutions in a sustainable direction: "researchers studying the usefulness of international voluntary HESD declarations (higher education sustainable development red.) have criticized them for lacking compulsory requirements to demonstrate accountability" [3].

Despite the criticisms and the low implementation rate, the procedural significance of the declarations has been emphasized. By way of example Calder and Clugston highlight that the SHE declarations have been a contributing factor in setting new standards for higher education at a global level, since particularly American universities commit themselves to work towards sustainability: "international declarations are significant because they symbolize the prominence of the sustainability movement, aid in the communication of major ideas to universities around the world, and implore those who have not committed to any sustainability initiatives to 'get on board'" [3].

SHE declarations are so far the most comprehensive piece of international regulation on the university's role and function as far as sustainable development is

concerned. Although the SHE declarations are so-called “soft laws” (declarations of intent) it is the general opinion that SHE declarations are the most concrete document that has been developed in the ongoing interactive process between influential university leaders, university institutions and governmental/inter-governmental institutions (principals and signatories). Thus, a SHE declaration is considered to be a joint agenda setting position paper which “frames” how universities articulate their role and function.

Previous studies of the significance of SHE declarations have been made mostly from the universities’ perspective. However, if we focus on the interaction between governmental/intergovernmental and university declarations, this perspective might demonstrate that declarations among other instruments, have reframed the importance of sustainability issues in university discourse. What will be made subject to analysis in this article is how SHE declarations have affected initiative-response and inclusion/exclusion processes among university institutions, governments and intergovernmental institutions. The article aims to investigate the mutual interaction that forms the basis for the development of sustainable universities. It will be shown how the university’s role and function in society is discursively constructed in research and education policies. In this way the article takes a new perspective for assessing the declarations’ political importance in the development of sustainable universities.

## 1. Results and discussion: an assessment of the SHE-declarations’ contribution to the concept of sustainable universities

Despite the lack of implementation of SHE declarations in general the interaction between university and governmental/intergovernmental institutions indicates that the SHE declarations have been significant for at least three reasons. In the first place, SHE declarations have contributed to the emerging consensus on the university’s role and function in relation to sustainable development [3]. Secondly, SHE declarations have influenced national legislation [34], and thirdly, universities are beginning to compete to become a leading in sustainable campus performance [37].

**1.1. Consensus and SHE declarations.** We find, like Calder & Clugston (2003), an emerging consensus between universities and intergovernmental institutions on the university’s role and function in relation to sustainability. This is underlined by our data according to which more than 1400 universities worldwide have signed a SHE declaration. Furthermore, the number of new declarations and the number of signatory universities reflect a growing interest and recognition that academic research and

education must incorporate sustainability aspects at least to some degree. This has caused a number of researchers, e.g., Calder and Clugston (2003), Corcoran et al. (2004), Wright (2004), Tilbury (2004), Brundiears (2010), Mochizuki (2010) etc., to claim that there is an emerging international consensus on the university’s role in relation to sustainability: “Overall, there is quite clear consensus on the comprehensive actions higher education must take if it is to embrace sustainable development” [3]. According to these researchers SHE declarations and conferences have had the definition power and thus a decisive influence on what sustainability means in higher education. Declarations highlight a growing trend towards the ecological modernization discourse that is embedded in research and education policy discussions about the university’s role and function in society [42].

**1.2. Law and SHE declarations.** Although the development is an on-going process among various actors that cannot be characterized neither as top-down nor bottom-up, we find that the SHE declarations have played an important role in the formulation of specific national legislation on universities’ role in relation to sustainable development [28, 34, 35]. Thus, most SHE declarations are so-called soft laws, they have affected national legislation in Germany, the UK and the U.S. and other countries. A number of SHE declarations have also sought to affect major international climate conferences such as the Bonn Declaration in connection with COP15 [29] but also the Bergen and Graz declarations within the Bologna Process [26] and the American Association of Universities’ (AAU) resolution [23] that has contributed to the framing of The Higher Education Sustainability Act (HESA) and the mobilization of research funding in the U.S. [22]. The most extensive is probably the Lübeck Declaration which can be read as a document that supports university-specific legislation at the federal state level in Germany [27].

**1.3. Competition on sustainable university performance and ranking.** Finally our study indicates that SHE declarations have helped to underpin the emerging competition of sustainability at universities and that it can become a competitive factor in the future. In some ways we radicalize Calder and Clugston (2003), Corcoran et al. (2004), Wright (2004), Tilbury (2004), Brundiears (2010), Mochizuki (2010) and many others’ observation that there is emerging international consensus on the university’s role in relation to sustainable development, by pointing out that “sustainable campus performance” also is about to result in competition between universities. Two trends, ranking systems of sustainable campus operation and monitoring tools, seem to imply that sustainability can be included as a ranking parameter in the future.

## 2. Experimental section – interaction between intergovernmental and university declarations

Discussions about sustainable universities were unknown only a few decades ago [4]. The technical and scientific achievements related to production and consumption, are key aspects of modernization processes that cannot be seen as independent of universities' research activities. Universities' production including research cannot only be seen as a solution to sustainability challenges, since they are also co-producers of the unintended consequences that work back on capital-nature relationship [42]. Just as the smoke from chimneys of the industrial society (due to scientific inventions) was seen as a symbol of economic growth and absence of smoke expressed stagnation and unemployment [43] the perception of research and technological achievements' environmental impacts have changed since it is now widely accepted that negative effects is a factor that also must be taken into consideration. At the same time as university research has highlighted climate and sustainability issues, the very same research has generated a counterpressure on the university to amend academia in a sustainable direction [5]. This duality has crystallized in a series of SHE declarations. According to our data there are 31 SHE declarations, of which 16 are developed mainly by the university sector.

*The Stockholm Declaration* from the United Nations Conference on the Human Environment in 1972 is the first declaration that interconnected education and sustainable development. Although it operates at a general level, the declaration's 19th principle helped to frame subsequent declarations [16]. According to Wright (2004), Calder and Clugston (2003) and others the Tbilisi Declaration from 1977 is described as one of the most important for the development of later SHE declarations. The Tbilisi Declaration is a result of the UNESCO/UNEP Intergovernmental Conference on Environmental Education, and provides the background for the first formal international sustainability initiatives in higher education. The declaration gained enormous influence, partly because it was the first declaration, which directly encouraged universities to consider sustainability issues, partly because the declaration formed the basis for the first program of education in sustainability through the UNESCO-UNEP International Environmental Education Program from 1978 [11].

The first declaration made by universities alone is the Talloires Declaration and it is the first declaration integrating sustainability into education, research and campus operations [17]. The declaration was made in 1990 by the Association of University Leaders for a Sustainable Future (ULSF) that committed itself to make every effort to change academia in a sustainable

direction [17]. The first university declarations paved the way for the formation of sustainable university alliances. The Talloires Declaration is considered to be a preliminary step towards ensuring research and educational are included in the agenda of the Rio UNCED conference in 1992. The Rio Declaration is an interstate agreement text that specifically affects the development of subsequent declarations through Agenda 21, Chapter 36.1, which more or less directly supports the development of "sustainable universities" encouraging states to develop strategies and plans for research and education in sustainability. Apart from these initiative universities are involved in the process only to a limited degree [18].

In 1993 the International Association of Universities (IAU) and the Association of Commonwealth Universities (ACU) prepared the IAU Kyoto- and Swansea Declarations. Both can be seen as a response to the Rio Conference, and both, particularly the Swansea Declaration, expressed disappointment over the lack of involvement of universities during the Rio Conference. In 1994 the European University Association (EUA) made the CRE Copernicus Declaration<sup>1</sup> in which the signatories committed themselves to implement sustainability principles in response to the Rio Conference. This can be taken to signal collective commitment to meet Agenda 21, Chapter 36 [11].

The Lüneburg Declaration from 2001 can be seen as a preliminary document prepared by UNESCO and the university sector prior to the intergovernmental Rio +10 meeting in Johannesburg, UN WSSD (2002), to ensure that the university sector was involved in the decision-making process and to achieve that higher education climbed to the top of the agenda. The declaration is unique, because it recognized the difficulties involved in implementing previous declarations for which reason it called for the development of monitoring and management tools [19]. During the Johannesburg Summit<sup>1</sup> the UN Decade of Education for Sustainable Development 2005-2014 (DESDE) and the Ubuntu Declaration were adopted, the latter being an addendum to the Johannesburg Declaration, which deals specifically with higher education. The university sector used this as an opportunity to put at least a symbolic fingerprint in the document so as to give education and research top priority [20]. Finally, the Bonn Declaration (2009), and the Sapporo Sustainability Declaration (2008), need to be mentioned since they highlight the political dimension in the declaration's genesis. The Bonn Declaration: "Highlight the relevance and importance of education and training in the UN Summit on Climate Change (COP 15) in

<sup>1</sup> Association of European Universities (CRE), European University Association, EUA.

Copenhagen, Denmark, in December 2009” [29], whereas the Sapporo Sustainability Declaration is a position paper prepared by 27 rectors during the G8 Summit in Hokkaido, Japan, in 2008. From the declaration it appears that the G8 countries were encouraged to implement specific education and research initiatives and to strengthen cooperation between the university sector and the state so as to ensure sustainable growth [33].

In recent years the number of SHE declarations has sharply increased. According to our data (see Table 2) a total of 31 declarations has come into existence since 1972; of these 20 since the millennium, and 13 within the last five years.

Table 1. The evolution of SHE declarations, year, number and intensity

Year	1970-1979	1980-1989	1990-1994	1995-1999	2000-2004	2005-2010
Number	2	0	6	3	7	13
Intensity	0,2	0	1,5	0,6	1,4	2,2

As Table 1 indicates the period under investigation can be divided into six minor periods in which there was a heavy increase in the number and intensity of declarations particularly from 1990 to 1994, 2000 to 2004 and from 2005 to 2010. An interesting observation to be made is that the emergence of new declarations coincides with worldwide conferences such as Rio (1992), Johannesburg (2002) and Copenhagen (2009). The Kyoto Conference (1997), however, is an exception despite the fact that the International Association of Universities (IAU) prepared a declaration in order to influence the political process. The reason why there is a decline of declarations may be explained by the fact that the U.S did not ratify the Kyoto protocol. According to Calder and Clugston (2003) the Reagan administration downplayed the discussions about sustainability in higher education, and consequently it did not reach the political agenda until the Brundtland Report [3]. In this way there seems to be a correlation between “high politics” and higher education institutions’ agenda. It is noteworthy that the university sector can be related so directly to the international political agenda.

**2.1. Increasing interaction and SHE declarations’ importance in the U.S., the UK and Germany.**

Since the U.S., the UK and Germany are among the most important research nations in the world and the vast majority of SHE declarations are signed by universities from one of these nations, we pay special attention to these nations in the following survey of the interaction between university and state. Only the most important declarations are included in this paper.

In the U.S., the interaction between The National Science Foundation (NSF), The National Science Board (NSB) and Association of American Universities (AAU) illustrate the relationship between university declarations and governmental and advisory bodies. In April 2009 NSB published the report “*Building a Sustainable Energy Future*” [24], and AAU adopted the *Resolution on Green Energy Research and Training* that endorsed NSB’s recommendations and in which it was underlined that NSF “should continue to increase emphasis on innovation in sustainable energy technologies and education as a top priority” [23]. In the declaration AAU proposed to the Congress that \$150 billion was allocated to the implementation of *The Higher Education Sustainability Act* (HESA) of 2008 [22], however in June 14<sup>th</sup>, 2010 \$28 billion was passed at FY 2010.

In Europe the *Graz Declaration on Committing Universities to Sustainable Development* of 2005 should be seen as a part of the Bologna and the Lisbon processes that since they were adopted in 1999 and 2000, respectively, have gradually incorporated sustainability elements. The aim of the Graz declaration made by EU, COPERNICUS (under EUA) and UNESCO is to: “integrate sustainability issues into the framework of the Bologna Process using COPERNICUS” [26]. In the declaration the European ministers of education are encouraged to integrate sustainability in the Bologna process during a meeting in Bergen in 2005: “Call on Ministers at the Conference of European Ministers responsible for Higher Education to be held in Bergen in May 2005 to use sustainable development as a framework for the enhancement of the social dimension of European Higher Education as well as to contribute to the attractiveness of the European Higher Education Area” [26].

In the same year the United Nations Economic Commission for Europe (UNECE) together with EU *UNECE Regional Strategy for Education for Sustainable Development* and the European ministers of education and environment agreed that sustainability, energy and climate were one among other prioritised research areas [25]. During a meeting in April 2009 in Louvain-la-Neuve, the ministers of education from the 46 European nations that participate in the Bologna process decided to keep sustainability as a research topic in the next decade: “We call upon European higher education institutions to further internationalize their activities and to engage in global collaboration for sustainable development...Within a framework of public responsibility we confirm that public funding remains the main priority to guarantee equitable access and further sustainable development of autonomous higher education institutions. Greater attention should be paid

<sup>1</sup> UN General Assembly, 57th session/254.

to seeking new and diversified funding sources” [28]. It is very likely that the potential signal value from the development in supranational education policies has been a contributing factor towards the development of declarations in the university sector and towards the sustainable development of universities.

In Germany sustainability is not only in integrating part of the Constitution through the Reichstag (Grundgesetz, Article 20a GG)<sup>1</sup>, but also in legislation on higher education in the Länder, e.g., in Die Berliner Hochschulgesetz § 4 (Aufgaben der Hochschulen), and in Die Hamburgisches Hochschulgesetz § 3 (Gemeinsame Aufgaben der Hochschulen), both amended in 2009 [34, 35]. Sustainability is also made explicit in the objectives clause of Die Hamburgisches Hochschulgesetz: “The universities are, depending on their function (...) to encourage the use of their research in practice. They are based on the performance of their duties to the principles of sustainable development” [34]. There might not be a direct relation to the international development of SHE declarations, but the university laws can be seen as interacting with the Bonn and Lübeck declarations: *Universities for Sustainable Development* (2009) made in cooperation with UNESCO and the German Rectors’ Conference (HRK) [27].

Also Great Britain has adopted legislative measures to integrate sustainability in higher education. The SHE declarations have probably not produced the same effects as illustrated by the above examples but have implicitly underpinned grant structures and legislative foundations.

In 2008 the British Government signed *The Carbon Reduction Commitment*. This produced an impact on the *Higher Education Funding Council for England’s* (HEFCE) strategy from 2009 in which we can find the following statement: “In November 2008 the English Government raised the climate change target to at least an 80 per cent cut in CO<sub>2</sub> emissions by 2050. We believe that universities and colleges should take a lead in this area: doing so would bring environmental benefits, financial savings, and enhance the sector’s reputation” [30].

The grant letter from the Secretary of State (2008) sets specific carbon reduction targets and expects the university sector to reduce its emissions with 60% in 2050 with 1990 as baseline. The British government recommends in its Grant letter from the Secretary of State (2009) to HEFCE that the targets

for higher education is raised to 80% CO<sub>2</sub> reduction in 2050 with 1990 as the base-line which corresponds the governments overall targets [31]. According to HEFCE these targets are to be included in the next strategy plan [30]. Originally HEFCE suggested a 50% reduction in 2020 for universities, but according to Times Higher Education the British headships (UUK) succeeded in reducing HEFCE’s demands to 34%. HEFCE’s 2020 target implies that: “universities must cut their emissions by 34 per cent by 2020 from a 1990 baseline or face financial penalties” [32]. However, several corrections have been made after the last election. Since the election the baseline has been changed from 1990 to 2006 and how deeply the financial cuts will affect the environmental efforts is still uncertain.

Although HEFCE capital allocations will be linked to carbon reduction from 2011, higher education institutions (HEIs) are required to develop individual carbon reduction strategies, targets and associated carbon management plans, the plans are dependent on the outcome of the next government spending review. According to HEFCE the outcome will be finally decided upon in July 2010.

Modified incentive structures and demands on specific targets have significantly affected the development of sustainable strategies in British universities. If we look at the development in the last decade, the British example can neither be characterized as a bottom up or a top down process, but as a continuous dialogue and negotiation of the right to define targets and demands on the university’s role within sustainable growth.

### 3. Sustainable university ranking and monitoring tools

Green League 2007, Environmental and Social Responsibility Index 2009 and UI Green Metric Ranking of World Universities 2010 are examples of ranking systems of campus operations’ environmental impact.

A British Sustainable University Alliance, The Environmental Association for Universities and Colleges (EAUC) did their first ranking of British universities in 2009, the Universities That Count’s *Environmental and Social Responsibility Index* [41]. In 2010 Times Higher Education published such data: “This year (June 2010 red.), for the first time, Times Higher Education is also publishing data from the Universities that Count (UTC) benchmarking scheme to highlight best practice in sustainable teaching and learning. The UTC programme groups universities by levels of achievement for various sets of criteria, and we name the top five performers in sustainable curricula” [32].

<sup>1</sup> Basic Law for the Federal Republic of Germany (GG), Article 20a: “The State is responsible for protection of natural rights of future generations within the framework of constitutional order and in accordance with law and justice by the executive and judicial action”.

Green League 2010 is another example of a ranking system of British universities also for the first time published by the Times Higher Education in June 2010 [32]. People & Planet, a student organization in Britain, has initiated the Green League and compiled their first ranking of the UK universities in 2007.

The 2010 ranking compares 133 universities and finds that only five universities neither have developed environmental policies nor environmental plans. Moreover, the Green League compares initiatives and plans throughout the university sector: "For the first time ever, the Green League 2010 compared the scope and ambition of 133 universities' carbon reduction plans against sector-wide climate targets introduced earlier, this year by UUK<sup>1</sup>, GuildHE<sup>2</sup> and HEFCE<sup>3</sup>" [32]. Green League ranks not only the university, but also implementation plans and policies initiated by UUK, HEFCE and GuildHE. Hence, governmental institutions and universities must accept being ranked by student organizations. Finally, in 2010 the University of Indonesia made a call for a global ranking list of universities' sustainable performance. Thus, UI Green Metric Ranking of World Universities is the first attempt to make a global ranking of universities' sustainable behavior "to provide a profile for and way of comparing the commitment of universities towards going green and promoting sustainable operation" [40].

By extension, the Sierra Magazine and Kaplan College Guide, respectively since 2007 and 2009 did their first Green College Guides. The guides benchmark the most environmentally friendly educational institutions in the U.S., as a part of their training guide, suggesting that greener universities can be a point of student attraction [38, 39]. A case in point is that universities in the U.S. as, for example, the University of California, Berkeley profile their rankings from Kaplan and Sierra next to Times Higher Education, Shanghai and other ranking systems. However, more research is needed to conclude whether sustainable universities are subject for attraction of researches and students.

Green campus monitoring tools have been developed within the framework of SHE declarations and sustainable university alliances, e.g., by ULSF, NJHEPS, AUC and AASHE<sup>4</sup> to assess universities on a comparable basis. Cases in point are AISHE 2.0<sup>5</sup> from 2009 in which one objective is to be: "Ex-

cellent in comparison with colleague institutions" [36] and STARS 1.0<sup>6</sup>. STARS 1.0 launched in 2010 can be viewed as a holistic ranking system assigning different grades and certifications (Platinum, Gold, Silver and Bronze) [37].

The different monitoring tools implemented by sustainable campus alliances serve two purposes<sup>7</sup>. Firstly they are analytical tools which provide the basis for prioritization of energy efficiency and implementation of sustainable principles, and secondly they are used as a branding and marketing tool. Finally, researchers such as Lukman et al. have tried to develop models that can be used to rank and evaluate universities on the basis of indicators in research, education and environmental performance [8]. It is against this background we find that there is emerging competition among universities on sustainability issues. Although there have not so far been made any ranking systems of sustainable performance for German and American universities, as is the case in Britain, the monitoring tools and colleague guides indicate that they may be on their way.

## Conclusion

We have identified a total of 31 SHE declarations of which 13 or almost half have been signed within the last five years. The development of SHE declarations have increased both in terms of intensity and scope as well as the interaction between governmental and university declarations has been intensified. The interaction between governmental, university and supranational institutions indicates that in education and research policies sustainability have gained increased attention. This has produced an effect at least in three different ways. In the first place the parties seem to internationally agree on the universities' role and function in sustainable development. In the second place the SHE declarations have formed the basis for the adoption of national legislative measures, e.g., in Germany, the UK and the U.S. In the third place, there competition among universities on green campus performance has emerged. There is no doubt that the SHE declarations have been of great importance in the universities strategic arrangements since 1990.

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<sup>1</sup> UUK, Universities UK.

<sup>2</sup> GuildHE, University Association.

<sup>3</sup> HEFCE, Higher Education Funding Council for England.

<sup>4</sup> University Leaders for a Sustainable Future (ULSF), Environmental Association for Universities and Colleges (EAUC), The New Jersey Higher Education Partnership for Sustainability (NJHEPS), and Association for the Advancement of Sustainability in Higher Education (AASHE).

<sup>5</sup> AISHE, Assessment Instrument for Sustainability in Higher Education.

<sup>6</sup> STARS, Sustainability Tracking Assessment & Rating System.

<sup>7</sup> Campus Carbon Calculator, Ecocampus and NJHEPS – Snapshot are other examples of green campus monitoring tools.

## References

1. Alshuwaikhat, H., Abubakar, I. (2008). An integrated approach to achieving campus sustainability: assessment of the current campus environmental management practices, *Journal of Cleaner Production*, 16, pp. 1777-1785.
2. Bekessy, S., Samson, K., Clarkson R. (2007). The failure of non-binding declarations to achieve university sustainability – a need for accountability, *International Journal of Sustainability in Higher Education*, Vol. 8, No. 3, 30 p.
3. Calder, W., Clugston, R. (2003). Progress Toward Sustainability in Higher Education, *Environmental Law Reporter*, 33, pp. 10003-10023.
4. Clarke, A., Kouri, R. (2009). Choosing an appropriate university or college environmental management system, *Journal of Cleaner Production*, 17, pp. 971-984.
5. Corcoran, P., Calder, W., Clugston R. (2002). Introduction: higher education for sustainable development, *Higher Education Policy*, 15, pp. 99-103.
6. Clugston, R., Calder, W. (1999). Critical Dimensions of Sustainability in Higher Education. In *Sustainability and University Life* (Ed.), Walter Leal Filho, Lang Peter XXX.
7. Lidgren, A., Rodhe, H., Huisingh D. (2006). A systemic approach to incorporate sustainability into university courses and curricula, *Journal of Cleaner Production*, 14, pp. 797-809.
8. Lukman, R., Krajnca, D., Glaviča, P. (2010). University ranking using research, educational and environmental indicators, *Journal of Cleaner Production*, Vol. 18, No. 7, pp. 619-628.
9. Tilbury, D. (2004). Environmental Education for Sustainability: a force for Change in Higher Education, in *Higher Education and the Challenge of Sustainability* (Ed), Corcoran, P., Wals A: Kluwer Academic, Dordrecht, Netherlands, pp. 97-112.
10. Weenen, Hans. (2000). Towards a vision of a sustainable university, *International Journal of Sustainability in Higher Education*, 1, pp. 20-34.
11. Wright, T. (2004). The evolution of sustainability declarations in higher education, In *Higher Education and the Challenge of Sustainability*, (Ed), Corcoran, P., Wals A: Kluwer Academic, Dordrecht, Netherlands, pp. 7-14.
12. Wright, T. (2002). Definitions and frameworks for environmental sustainability in higher education, *International Journal of Sustainability in Higher Education*, Vol. 3, pp. 203-220.
13. Zilahy, G. (2009). Roles of academia in regional sustainability initiatives: outreach for a more sustainable future, *Journal of Cleaner Production*, 17, pp. 1053-1056.
14. Mochizuki, Y., Fadeeva, F. (2010). Competences for sustainable development and sustainability significance and challenges for ESD, *International Journal of Sustainability in Higher Education*, Vol. 11, No. 4, pp. 391-403.
15. Brundiers, K. (2010). Real-world learning opportunities in sustainability: from classroom into the real world, *International Journal of Sustainability in Higher Education*, Vol. 11, No. 4, pp. 308-324.
16. Stockholm Declaration (1972). UNESCO.
17. Talloires Declaration (1990). University Leaders for a Sustainable Future, ULSF.
18. UNSCD. Promoting Education, Public Awareness and Training (1992). Agenda 21, Kap. 36.
19. Lüneburg Declaration (2001). UNESCO.
20. Ubuntu Declaration, Education and Science and Technology for Sustainable Development (2002), UNESCO.
21. European University Association. EUA policy position: the future of the Bologna Process post 2010, 2008, European University Association, Brussels.
22. Higher Education Sustainability Act (2008). Congress, Washington.
23. AAU Resolution on Green Energy Research and Training (2009). Association of American Universities, Washington, USA.
24. National Science Board. Building a Sustainable Energy Future: U.S. Actions for an Effective Energy Economy Transformation, National Science Board, August 3, 2009, Arlington, Virginia, USA.
25. Regional Strategy for Education for Sustainable Development (2005). UNECE (United Nations Economic Commission for Europe, Economic Commission for Europe Committee on Environmental Policy UNECE Strategy for Education for Sustainable Development, adopted at the High-level meeting, CEP/AC.13/2005/3/Rev.1, March 23, 2005.
26. The Graz Declaration (2005). UNESCO.
27. Universities for Sustainable Development, Declaration by the German Rectors' Conference and the German Commission for UNESCO on Higher Education for Sustainable Development, Resolution adopted by the 7th General Meeting of the German Rectors' Conference on November 24, 2009, Resolution by the Executive Committee of the German Commission for UNESCO on January 22, 2010.
28. EU Commission, The Bologna Process 2020 – The European Higher Education Area in the new decade Communiqué of the Conference of European Ministers Responsible for Higher Education, Leuven and Louvain-la-Neuve, April 28-29, 2009.
29. Bonn Declaration, World Conference on Education for Sustainable Development (2009). UNESCO.
30. HEFCE, Sustainable development in higher education 2008 – update to strategic statement and action plan, February 2009/03, Statement of policy, Higher Education Funding Council for England, HEFCE.
31. Grant letter from Secretary of State, December 2009. Download <http://www.hefce.ac.uk/finance/fundinghe/grant/>.
32. Fearn, H. (2010). The colour of money, Times Higher Education, June. Download <http://www.timeshighereducation.co.uk/story.asp?storycode=411971>.

33. Sapporo Declaration (2008).
34. Die Hamburgisches Hochschulgesetz § 3 (Gemeinsame Aufgaben der Hochschulen, 2009).
35. Die Berliner Hochschulgesetz § 4 (Aufgaben der Hochschulen), 2009.
36. AISHE 2.0 Manual (2009).
37. STARS 1.0. Manual (2010).
38. Kaplan College Guide. Available at: <http://www.kaptest.com/oneoff/collegeguide.jhtml>.
39. Sierra magazine Green College Guide: Available at: <http://www.sierraclub.org/sierra/200809/cool-schools/>.
40. GreenMetric Ranking (2010). University of Indonesia. Available at: <http://greenmetric.ui.a.id/id/page/faq>.
41. Universities that Count Annual (Report 2009/10). Transforming environmental and social performance in universities.
42. Grindsted, T. Risting, J. Bæredygtige universiteter – Hvor vil vi hen? Roskilde Universitet, Roskilde, Denmark, 2011, pp. 34-68.
43. Toft Jensen, H. Det globale miljø – 1990'ernes store udfordring. In Verdensanalyse: Materialesamling til tiden efter 1945, Carstensen, M., Frese J., Hansted, B., Olsen A. Gyldendal, København, Denmark, 1993, pp. 28-44.