



From Global Programs on ESD to Local Implementation in Higher Education

Part 1

Authors: Linde Warland and Clemens Mader

This handout provides an overview of what sustainable development (SD) means and the role of universities in contributing to education for SD. The eight handouts that make up this series also provide suggestions for further reading and questions to help participants reflect on how they can include SD in their own teaching.

Handout Series: Enabling Leadership for Transformational Teaching for Sustainable Development
Editors: Clemens Mader, Linde Warland and Lorenz M. Hilty

This series consists of eight handouts. It forms an integral part of the 2015 professional training program “Enabling Leadership for Transformational Teaching and Learning for Sustainable Development” (ELTT) organized by the Sustainability Team at University of Zurich, Switzerland.

ELTT is funded by the Sustainable Development at Universities Programme, which is supported by the Swiss Academies of Arts and Science and the Mercator Foundation Switzerland.

Table of contents

1 Sustainable development – An introduction	3
1.1 Defining sustainable development	3
1.2 The UN Conference on Environment and Development	3
1.3 Current debates on SD – Sustainable Development Goals	4
1.4 Government approaches to SD at different levels	4
1.5 Current situation	4
2 Education for Sustainable Development	5
2.1 UN Decade on ESD	6
2.2 Global Action Program on ESD	7
3 The four pillars of education	7
4 The role of universities in sustainable development	8
4.1 Education	8
4.2 Research	9
4.3 Operations	9
5 University Initiatives in the UN Decade on Education for Sustainable Development & the Global Action Programme on ESD	9
6 References	10
ELTT Partners	13
Publishing details	13

1 Sustainable development – An introduction

1.1 Defining sustainable development

The publication of the “Report of the World Commission on Environment and Development: Our Common Future” (also known as the “Brundtland Report”) in 1987 marked a milestone in the discussion around sustainable development (SD). The then Secretary General of the United Nations (UN) had asked an independent commission chaired by Gro Harlem Brundtland to prepare “a global agenda for change” suggesting, among other things, environmental strategies and means for converting the general concern about environmental issues into greater cooperation between countries at different stages of development (Brundtland Report, 1987, 5). The Brundtland Report contains a basic definition of SD that is widely used today:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (Brundtland report, 1987, 41)

The key to this definition is its incorporation of two different kinds of equity: equity between current generations (“the needs of the present”), and equity between current and future generations (“without compromising the ability of future generations to meet their own needs”). While this can be seen as the standard definition of SD, it leaves a certain amount of room for interpretation (Robert et al., 2012, 12; see also Jickling, 1992).

The final document of the 2002 World Summit on Sustainable Development refers to three pillars of SD. It states that the world’s nations “assume a collective responsibility to advance and strengthen the interdependent and mutually reinforcing pillars of sustainable development — economic development, social development and environmental protection — at the local, national, regional and global levels” (UN, 2002, 1). These three pillars have since been widely used to describe SD (Robert et al., 2012, 12), with the

occasional addition of a fourth dimension linking the other three together – culture (UNESCO, 2006, 15).

However, there are strong arguments against structuring SD according to these three (or four) pillars, as the pillars are in fact closely interlinked with each other. This discussion is reflected in the current debate on planetary boundaries (Rockström et al., 2009; Steffen et.al, 2009; Raworth, 2012) and around the new UN Sustainable Development Goals (SDG) (UN, 2015).

Further reading: Key books that preceded but influenced the debate on sustainability:

- Carson, R. (1962): Silent Spring
- Meadows, D. et al. (1972): Limits to Growth

1.2 The UN Conference on Environment and Development

The 1992 UN Conference on Environment and Development in Rio de Janeiro led to two legally binding conventions on SD¹ and the creation of the Commission on Sustainable Development (CSD). It also resulted in the Agenda 21 program, which contains a set of program areas relevant for SD, such as “enabling the poor to achieve sustainable livelihoods” (UN, 1992). Since then, a world summit on SD has been held every ten years, including the 2002 Summit on Sustainable Development in Johannesburg and the 2012 UN Conference on Sustainable Development in Rio de Janeiro – also known as the Rio+20 Summit. The Rio+20 Summit led to the “The Future We Want” declaration and the establishment of the global aim of developing SDGs as a follow-up to the Millennium Development Goals (MDGs). Moreover, at the Rio+20 Summit it was decided that the CSD should be replaced by the “High Level Political Forum on Sustainable Development,” whose role will include conducting reviews on the implementation of the SDGs (UNDESA, 2015).

¹ The United Nations Framework Convention on Climate Change, and the Convention on Biological Diversity, UN, 1997.

1.3 Current debates on SD – Sustainable Development Goals

In September 2015, the SDGs were acknowledged by the UN General Assembly at the UN World Summit for Sustainable Development held at UN Headquarters. The SDGs are a follow-up to the MDGs, which were agreed upon in 2000 and had a timeframe lasting up until 2015. The MDGs contained eight goals – such as “Eradicate extreme poverty and hunger” or “Ensure environmental stability” – each of which contained specific targets (UN, 2015). Some of these targets have since been met (e.g. halving the number of people whose income is less than USD 1 a day between 1990 and 2015²), while others have not, despite some progress (e.g. reducing the under-five mortality rate by two-thirds between 1990 and 2015; UN, 1995, 14, 32).

The key differences between the SDGs and the MDGs are their number (17 SDGs vs. 8 MDGs) and their scope. The SDGs contain 169 targets to be implemented and on which action must be taken in all countries, whereas the MDGs were mainly relevant for developing countries. Furthermore, the SDGs follow an integrative and inclusive understanding of sustainability; they must be approached in a connected manner rather than separately.

Question:

- Which of the SDGs relate to my own field of work? Are my students aware of the connection with international policies?

Further reading:

- On the progress of MDGs, see UN (2015a): The Millennium Development Goals Report 2015
- For the final version of the SDGs adopted by the General Assembly in September 2015, see UN (2015b): Transforming our world: the 2030 Agenda for Sustainable Development

² Note that despite the overall target being met, strong regional differences persist. Forecast reductions in the proportion of people living in extreme poverty (on less than USD 1.25 a day) are -28% for sub-Saharan Africa and -94% for China (UN, 2015, 14).

1.4 Government approaches to SD at different levels

The 2002 Johannesburg Declaration on Sustainable Development indicates that SD can be implemented at different levels. For example, at an international level there have been global negotiations on SDGs. SD is also referred to in a number of international conventions; for instance in the context of the UNFCCC, the Green Climate Fund shall provide funding to developing countries for climate change mitigation or adaptation activities “in the context of sustainable development” (UNFCCC, 2011, para. 2).

At a national level, many countries, including Switzerland, Austria and Germany, have developed national sustainability strategies. Switzerland incorporates SD into its constitution, which states that “the Confederation and the Cantons shall endeavour to achieve a balanced and sustainable relationship between nature and its capacity to renew itself and the demands placed on it by the population” (para. 73).

Agreement on Agenda 21 at the international level has also led to the development and implementation of local Agenda 21 processes that link global strategies to the local level in both rural and urban areas.

1.5 Current situation

While no agreed single method exists for measuring the extent to which SD has already been achieved, or the extent to which the world is on track to achieve it, a number of studies have assessed the current status of specific issues relevant for SD. For instance, Steffen et al. (2009) provide an analysis of the extent to which mankind is within a “safe operating space” for nine specific planetary boundaries. According to their assessment, four of these planetary boundaries have already been crossed, namely biosphere integrity, climate change, land-system change, and biochemical flows (Steffen et al., 2009, 742).³

³ Note that in their assessment, Steffen et al. set a planetary boundary before a global threshold is reached in order to take account of uncertainties and provide an early warning to society that a threshold may soon be reached (Steffen et al., 2009, 737f.).

Another approach for measuring the current status of sustainable (or unsustainable) development is that of the Global Footprint Network. Each year, the Network announces an “Earth Overshoot Day” – the day on which, according to their calculations, humans have consumed all the natural resources available for that year. This day was October 21 in 1993, and as early as August 13 in 2015 (Global Footprint Network, 2014, Global Footprint Network, 2015).

The UN Development Programme (UNDP) uses two measurements: the Human Development Index and the Multidimensional Poverty Index (UNDP, 2015). These indices primarily measure living standards of people in relation to access to education, energy supply, infrastructure, and access to clean water.

Most countries measure their own development in terms of gross domestic product (GDP), a purely economic approach. However, GDP does not adequately reflect the SD of a region. Consequently, the UN is currently developing new approaches in its “Beyond GDP” initiative (UN, 2015).

Further reading:

- For a map of the ecological footprint of different countries, see Global Footprint Network (2015): <http://www.overshootday.org>
- To learn more about the ecological footprint of Switzerland, see Stokar et al., (2006): Ecological Footprint of Switzerland, Technical Report

2 Education for Sustainable Development

In the same way that education is key for achieving economic development, it is also essential for achieving sustainable development. Education enables people to make sustainable choices with regard to their consumption, and provides the basis for conducting business in a more sustainable manner. At the same time, a lack of education can lead to unsustainable behavior, for instance where learners lack

opportunities “to question their own lifestyles and the systems and structures that promote those lifestyles” or where education reproduces “unsustainable models and practices” (UNECE, 2013, 37). To promote SD, “respect” needs to be seen as a key value: respect for other humans, for future generations, for other species, for nature, and for cultural differences (UNESCO, 2006, 16).

The Agenda 21 declaration of 1992 includes an article on education, training, and public awareness (Article 36, in the chapter on the means of implementation). The objectives here are to ensure access to basic education worldwide, awareness of developmental and environmental concerns, “accessibility of environmental and development education,” and the integration of such concepts into “all education programmes” (UN, 1992, Art. 36.4). The activities that Agenda 21 proposes that are relevant for higher education include i) inter-disciplinary courses, ii) strengthening existing networks for SD-related teaching and research, and iii) outreach to and partnerships with the private sector and other countries (UN, 1992, Art. 36.5 i).

According to UNESCO (2015), education for sustainable development (ESD) “aims to help people to develop the attitudes, skills, perspectives and knowledge to make informed decisions and act upon them for the benefit of themselves and others, now and in the future. ESD helps the citizens of the world to learn their way to a more sustainable future.” UNESCO also describes the key characteristics of ESD, namely that it:

- “is based on the principles and values that underlie sustainable development;
- deals with the well-being of all four dimensions of sustainability – environment, society, culture and economy;
- uses a variety of pedagogical techniques that promote participatory learning and higher-order thinking skills;
- promotes lifelong learning;
- is locally relevant and culturally appropriate;
- is based on local needs, perceptions and conditions, but acknowledges that fulfilling local needs often has international effects and consequences;

- engages formal, non-formal and informal education;
- accommodates the evolving nature of the concept of sustainability;
- addresses content, taking into account context, global issues and local priorities;
- builds civil capacity for community-based decision-making, social tolerance, environmental stewardship, an adaptable workforce, and a good quality of life;
- is interdisciplinary. No single discipline can claim ESD for itself; all disciplines can contribute to ESD.” (UNESCO, 2015b)

It is interesting to note that a previous version of this list of key characteristics published by UNESCO in 2005 referred only to the three basic pillars of sustainability and did not include the cultural dimension (UNESCO, 2005, 30f.).

Further reading:

- For a discussion on ESD, see:
 - Jickling (1992): Why I don't want my children to be educated for sustainable development
 - Hopkins (2012): Reflections on 20+ years of ESD

2.1 UN Decade on ESD

The UN named the period from 2005 to 2014 the “UN Decade on ESD” (DESD). The aim was to enable ESD to contribute to the common vision of “a world where everyone has the opportunity to benefit from quality education and learn the values, behavior and lifestyles required for a sustainable future and for positive societal transformation” (UNESCO, 2006, 24). Besides highlighting the significance of ESD, the DESD aimed to foster networks for cooperation, develop strategies for strengthening ESD, enhance teaching in ESD, and trigger discussions and contributions to the decade's vision (UNESCO, 2006, 24).

The “International Implementation Scheme” for the DESD proposed implementation strategies for various actors (governments, individual actors, groups) ranging from capacity building and research to

information and communication technologies (UNESCO, 2005). Initiatives under the DESD were many and varied, at a global, national, and local level.

At a global level, one direct result of the DESD was the formation of the network of Regional Centres of Expertise (RCEs) on ESD (see Section 5 below).

On a regional level, in 2005 the UN Economic Commission for Europe (UNECE) adopted the “UNECE Strategy for ESD,” a strategy that can be implemented by member states according to their circumstances (needs, priorities; UNECE, 2005). The Strategy sets out areas for action ranging from supporting ESD and adequate policy frameworks to developing the necessary competences for educators. It also defines the various aspects of “effective ESD” (UNECE, 2005). Several countries have since implemented national ESD strategies (see, for instance: German UNESCO Commission, 2005; EDK and Swiss Government, 2007).

On a national level, some countries, such as Switzerland, have granted awards to projects striving to enhance ESD (Swiss UNESCO Commission, 2015). In Germany, Austria, and many other countries, the national UNESCO commissions have officially recognized initiatives supporting ESD under the DESD. In Austria, for instance, the Federal Ministry of Research, Science, and Economy together with the Federal Ministry of Agriculture, Forestry, Environment, and Water Management initiated the Sustainability Award, which recognizes outstanding sustainability practices at universities in eight categories every two years. By promoting best practices, such awards have led to increased impact and the exchange of knowledge between “change agents” and scaling of impact by the promotion of good practices.

At a local level, NGOs, formal and non-formal educational institutions on all levels, businesses, and local governments have initiated activities in the area of ESD.

2.2 Global Action Program on ESD

To ensure that efforts under the UN Decade on DESD continued after 2015, the Global Action Program (GAP) on ESD was agreed in 2013. The GAP aims “to generate and scale up action in all levels and areas of education and learning to accelerate progress towards sustainable development” (UNESCO, 2014, 34). The GAP was officially launched at the World Conference on ESD in Nagoya, Japan, in November 2014. Activities in five priority areas support the achievement of this objective (see Table 1).

Table 1 Priority areas under GAP (based on UNESCO, 2014, 34ff.)

Priority area	Description
Policy support	ESD needs to be fully integrated into education policies and sustainability policies so as to reflect the decisive role of education in SD.
Whole-institution approach	This all-embracing approach allows institutions to gear their research, teaching, and operations towards SD.
Educators	Educators need to acquire the specific key competences (content, methodologies) required to teach interdisciplinary topics such as SD.
Young people	Young people need to receive formal and informal education that helps them become “change agents” for SD. This calls for a learner-centered teaching approach.
Local communities	Dialog and cooperation with other local actors enables the dissemination of research results and the possibility of working in a multi-stakeholder setting to develop approaches for achieving SD.

Stakeholders at all levels, including universities, are expected to contribute to the implementation of activities in these priority areas (UNESCO, 2014, 36).

Further reading:

- For more information on the GAP on ESD, see UNESCO (2014): Roadmap for Implementing the Global Action Programme on Education for Sustainable Development
- For reflections on 20+ years of ESD, see Hopkins (2012)
- Key UN documents on ESD:
 - UN (1992): Agenda 21
 - UNESCO (2009): Bonn Declaration (made midway through the DESD)
 - UN (2012): The Future We Want
 - UNESCO (2014): Aichi-Nagoya Declaration on Education for Sustainable Development

Questions:

- What are the urgent topics relating to SD in my local area? Can my field of work contribute to solutions here?
- Which actors have I worked with in the area of SD outside my university?
- Which local actors could I potentially work with in the future?

3 The four pillars of education

In 1996, the “International Commission on Education for the Twenty-first Century” published a report under the chairmanship of Jaques Delors that outlines four pillars of education:

- Learning to know: the ability to handle broad, general knowledge as well as detailed knowledge on specific issues
- Learning to do: the ability to act in and adapt to differing (work) situations
- Learning to live together: the ability to work and interact with respect with other people with differing backgrounds and values
- Learning to be: the ability to act responsibly and to acquire one’s own personality (International Commission on Education in the Twenty-first Century, 1996, 23; UNESCO, 1996, 37; Delors, 2013, 321f.).

These pillars were initially approached from a learner's perspective. However, the "UNECE Expert Group on Competences in Education for Sustainable Development" addressed them from the educator's perspective, identifying competences helpful for delivering ESD (UNECE, 2013, 15, 41f.). Such competences are also referred to as "ESD competences" – in contrast to "SD competences", which are the skills that students need to acquire (Wals, 2013, 13). The ESD competences were structured according to the four learning pillars and three aspects relevant for SD, namely the application of a "(i) holistic approach to (ii) envisioning change and thereby (iii) achieving transformation" (UNECE, 2013, 6, 15, 41f.).

4 The role of universities in sustainable development

Both the UN Decade on ESD and the GAP on ESD are addressed to all types of educational institutions. In these handouts, however, we focus on institutions of higher education.

Universities play a crucial role when it comes to SD. First, they educate future leaders in various areas (politics, economics, society). The education for SD received at universities therefore has great replication potential. Second, in their capacity as research institutions, universities can contribute to SD by producing research that addresses societal and environmental challenges. Third, by reaching out to other parts of society with their research, they can trigger SD initiatives in other regions and with other stakeholders. Finally, universities can contribute to SD through their own, sustainable operations, acting as a role model for their students and employees. By addressing all these aspects – a whole-institution approach – universities can ensure that their individual activities reinforce each other (Mader, 2004; CRE COPERNICUS Charta, 1993).

Of course, these roles are interconnected and cannot be completely separated from each other. Sustainability at universities needs to be tackled through a whole-institution approach that reflects these connections,

creating a holistic understanding of SD and impacting on all related areas.

Universities differ in their approach to SD. We will discuss possible approaches throughout this program. However, in the following sections we present in brief some examples of how SD can be included in university activities.

Today's sustainability challenges require innovative approaches in higher education that link education, research, operations, society, and the institution's role both regionally and globally.

4.1 Education

Various ways exist to address SD in higher education (Mader and Mader, 2012). Aspects of SD can be addressed in general courses (i.e. not specifically SD-related courses), for example by using sustainability-related case studies. Universities can also offer specific courses on SD or courses addressing different aspects of SD to students from various programs. For example, University of Zurich (Switzerland) offers the course "Nachhaltigkeit in der Gesellschaft." Some universities offer entire Bachelor's and Master's programs on SD, such as the Master in Sustainable Development at the University of Basel (Switzerland).

Lifelong learning also forms a central part of ESD. Here, universities play a leading role. For instance, the University of Berne (Switzerland) offers a Certificate of Advanced Studies in SD.

Implementation of sustainability topics in higher education

The degree to which sustainability is addressed in teaching can be classified into four categories, namely:

- "Denial (no change) (...)
- 'bolt-on' approaches (education about sustainability),
- 'build-in' approaches (education for sustainability), (...)
- curriculum redesign (sustainable education)" (Sterling and Thomas, 2006, cited in Barth and Rieckmann, 2011, 29)

Where sustainability is addressed in education, approaches differ, as can be seen from the examples above. The approach may be vertical (i.e. establishing separate SD courses), horizontal (i.e. incorporating aspects of SD into existing courses), or a combination of the two (Ceulemans and de Prins, 2010).

The role of educators in ESD

University educators play a crucial role in ESD. They are the ones who facilitate programs helping students gain the relevant skills and knowledge. However, they often face challenges integrating SD into their teaching (see Ceulemans and de Prins, 2010, 645f.). For this reason, there are various programs focusing on supporting teachers and developing their teaching competences for ESD (Barth and Rieckmann, 2011; Ceulemans and de Prins, 2010).

Further reading:

- Educational material for sustainable development is available on www.sustainicum.at
- Mader C., Mader M., (2012): Innovative teaching for sustainable development – approaches and trends

4.2 Research

SD-related research forms part of the research activities of many institutions and university departments. In addition, a number of universities have established interdisciplinary centers for sustainability research. The Leuphana University of Lüneburg (Germany), for example, established a Faculty of Sustainability in 2010 that conducts SD inter- and cross-disciplinary research. At the University of Graz (Austria), the Institute for System Science, Innovation and Sustainability Research focuses on the investigation of sustainability transitions through inter- and cross-disciplinary research.

ETH Zürich (Switzerland) has also taken an interesting approach in which it conducted research into sustainable canteens using its own canteen, thereby linking operations and research (ETH, 2015).

4.3 Operations

Universities engage in a wide variety of SD-related activities, including using recycled paper, fostering gender equality, ensuring access to university services for students and employees with disabilities, generating and consuming renewable energy, sustainable procurement, selling off investments in fossil fuel (e.g. University of Glasgow,⁴ 2014), compensating for CO₂ emissions caused by business travel, and aiming for carbon neutrality (e.g. Leuphana University of Lüneburg, University of Graz).

5 University Initiatives in the UN Decade on Education for Sustainable Development & the Global Action Programme on ESD

The UN placed a focus on ESD through the DESD and GAP that has led to initiatives in various types of educational institutions. This includes institutes of higher education, where several initiatives have been established as a direct result of global policies on ESD. Some, and by far not all, European and global initiatives are described in the following section.

COPERNICUS Alliance – European Network on Higher Education for Sustainable Development

The COPERNICUS Alliance (www.copernicus-alliance.org) finds its origins in 1993, when the European University Association, acknowledging the critical role of universities in advancing Agenda 21, launched COPERNICUS CAMPUS and the CRE COPERNICUS Charta in Geneva. European university rectors, presidents and vice-chancellors were invited to endorse and support the Charta which outlined ten “change pathways” including sustainable development values and ethics, education for university employees and students, and institutional strategic frameworks. The Charta, which resides with COPERNICUS Alliance has been endorsed by 326 European universities, showcasing their commitment

⁴ “Subject to reassurance that the financial impact for the University is acceptable” (University of Glasgow, 2014).

in leading change for sustainable development. Since 2007, when the COPERNICUS Alliance reframed its activities to strengthen the network, the alliance has launched European projects such as the University Educators for Sustainable Development (www.UE4SD.eu) initiative that brings together 53 universities from 32 European countries to strengthen professional training on ESD in higher education.

Global University Partnership for Environment and Sustainability (GUPES)

GUPES is a flagship program by the United Nations Environmental Programme (UNEP). GUPES aims to promote the integration of environment and sustainability concerns into teaching, research, community engagement, the management of universities including greening of university infrastructure/facilities/operations, as well as to enhance student engagement and participation in sustainability activities both within and beyond universities. This is done in accordance to the ongoing GAP on ESD, and the outcome document of the Rio+20 Summit - The Future We Want (UNEP, 2015).

Higher Education Sustainability Initiative

During the preparations for the Rio+20 Summit, UNESCO, UN-DESA, UNEP, Global Compact, and the UN University highlighted the important role of universities for sustainability by launching the Higher Education Sustainability Initiative (HESI). Almost 300 higher education institutions are currently members of HESI, under which they are committed for instance to report on sustainability or to carry out specific sustainability activities (UNDESA, 2015).

International Association of Universities

The Higher Education for Sustainable Development (HESD) working group of the International Association of Universities has been involved in discussions and initiatives on ESD for more than 20 years now. In 1993, HESD adopted the Kyoto Declaration on Sustainable Development, which highlights the important role played by universities in SD (IAU-HESD, 2015). Furthermore, HESD provides an online platform where member institutions can publish information about their initiatives and approaches relating to SD (<http://www.iau-hesd.net>). The result is a broad

overview of activities relating to sustainability in higher education (IAU-HESD, 2015), which has provided valuable input for the final report on the DESD and the implementation of the GAP (IAU-HESD, 2015).

Regional Centres of Expertise on ESD

The Institute for the Advanced Study of Sustainability at the UN University launched the network of RCEs in direct response to the DESD. Currently there are 138 RCEs worldwide. They aim to bring together various actors (universities, the private sector, local communities) to jointly develop solutions for SD (RCE, 2015).

6 References

- Barth, M., Rieckmann, M. (2011): Academic staff development as a catalyst for curriculum change towards education for sustainable development: an output perspective, *Journal of Cleaner Production* 26, 28-36
- Brundtland Report (1987): Report of the World Commission on Environment and Development: Our Common Future
- Carsen, R. (1962): *Silent spring*, The Riverside Press, Cambridge, Mass.
- Ceulemans, K., de Prins, M. (2010): Teacher's manual and method for SD integration in curricula, *Journal of Cleaner Production*, 18, 645-651
- Constanza, R., Kubiszewski, I., Giovannini, E., Lovins, H., McGlade, J., Pickett, K.E., Vala Ragnarsdóttir, K., Roberts, D., De Vogli, R., Wilkinson, R., (2014) Development: Time to leave GDP behind, *Nature*, 505, 283-285.
- Delors, J. (2013): The treasure within: Learning to know, learning to do, learning to live together and learning to be. What is the value of that treasure 15 years after its publication?, *International Review on Education*, (2013) 59:3, 319-330
- EDK and Swiss Government (2007): *Bildung für nachhaltige Entwicklung*, Massnahmenplan 2007-2014, retrieved from: http://edudoc.ch/record/24772/files/massnahmenplan_BNE_d.pdf?ln=enversion=1 (retrieved on August 3, 2015)
- ETH (2015): *Nachhaltige Gastronomie an der ETH Zürich*, retrieved from: <https://www.ethz.ch/de/die->

eth-zuerich/nachhaltigkeit/aus-und-weiterbildung/seed-sustainability/laufende-projekte0/nachhaltige-gastronomie-an-der-eth-zuerich.html (retrieved on July 21, 2015)

German UNESCO Commission (2005): Nationaler Aktionsplan für Deutschland, UN Dekade "Bildung für nachhaltige Entwicklung" 2005-2014, retrieved from: http://www.bne-portal.de/fileadmin/unesco/de/Downloads/Dekade_Publikationen_national/Nationaler_Aktionsplan_fuer_Deutschland_2005-2008.pdf (retrieved on August 3, 2015)

Global Footprint Network (2014): Earth Overshoot Day, retrieved from: http://www.footprintnetwork.org/de/index.php/GFN/page/earth_overshoot_day/, (retrieved on July 21, 2015)

Global Footprint Network (2015): Earth Overshoot day 2015, retrieved from: <http://www.overshootday.org> (retrieved on September 30, 2015)

Hopkins, C. (2012): Reflections on 20+ years of ESD, *Journal of Education for Sustainable Development*, 6:1, 21-35

IAU-HESD (2015): IAU in Action, retrieved from: <http://www.iau-hesd.net/en/contenu/139-iau-action.html> (retrieved on August 3, 2015)

International Commission on Education in the Twenty-first Century (1996): Report to UNESCO from the International Commission on Education in the Twenty-first Century, *Learning the treasure within*

Mader C. (2004): "Integration of Sustainability into Universities – Good Practices and Benchmarking for Integration, GRIN Verlag für Akademische Texte

Mader C., Mader M. (2012): Innovative teaching for sustainable development - approaches and trends In: Barcelo M., et al., *Higher Education in the World 4 - Higher Education's Commitment to Sustainability: from understanding to Action*, Palgrave Macmillan, pp.228-229

Meadows, D., Meadows, D., Randers, J., Behrens III, W. (1972): *The limits to growth: a report for the Club of Rome's project on the predicament of mankind*, Earth Island, London

RCE (2015): RCE vision and mission, retrieved from: <http://www.rce-network.org/portal/rce-vision-and-mission> (retrieved on August 3, 2015)

Robert, Kates W., Parris, Thomas M., Leiserowitz, Anthony A. (2005): *What is Sustainable Development?*

Goals, Indicators, Values, and Practice, Environment: Science and Policy for Sustainable Development, 47:3, 8-21

Raworth, K. (2012): *A Safe and Just Space for Humanity. Can we Live within the Doughnut?* Oxfam Discussion Paper. Retrieved from: <https://www.oxfam.org/sites/www.oxfam.org/files/dp-a-safe-and-just-space-for-humanity-130212-en.pdf> (retrieved on September 24, 2015)

Rockström, J., W. Steffen, K. Noone, Å. Persson, F. S. Chapin, III, E. Lambin, T. M. Lenton, M. Scheffer, C. Folke, H. Schellnhuber, B. Nykvist, C. A. De Wit, T. Hughes, S. van der Leeuw, H. Rodhe, S. Sörlin, P. K. Snyder, R. Costanza, U. Svedin, M. Falkenmark, L. Karlberg, R. W. Corell, V. J. Fabry, J. Hansen, B. Walker, D. Liverman, K. Richardson, P. Crutzen, and J. Foley. 2009. Planetary boundaries: exploring the safe operating space for humanity. *Ecology and Society* 14(2): 32

Steffen, W., Richardson, K., Rockström, J., Cornell, S., Fetzer, I., Bennett, E., Biggs, R., Carpenter, S., de Vries, W., de Wit, C., Folke, C., Gerten, D., Heinke, J., Mace, G., Persson, L., Ramanathan, V., Reyers, B., Sörlin, S. (2015): Planetary boundaries: guiding human development on a changing planet, *Science*, 347:6223, 737-746

Stokar von, T., Steinemann, M., Rüegge, B. (2006): *Ecological footprint of Switzerland*, technical report, Federal Office for Spatial Development, Agency for Development and Cooperation, Federal Office for the Environment, Federal Statistical Office (ed.)

Swiss UNESCO commission (2015): *Bildung für nachhaltige Entwicklung*, retrieved from: <http://www.dekade.ch> (retrieved on August 3, 2015)

UN (1992): United Nations Conference on Environment & Development, Rio de Janeiro, Brazil, 3 to 14 June 1992, Agenda 21, retrieved from: <https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>, (retrieved on July 13, 2015)

UN (1997): Earth Summit, retrieved from: <http://www.un.org/geninfo/bp/envirp2.html>, (retrieved on July 4, 2015)

UN (2002): Report of the World Summit on Sustainable Development, A/CONF.199/20

UN (2012): *The future we want*, retrieved from: <http://www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%201230pm.pdf>, (retrieved on July 21, 2015)

UN (2015a): *The Millennium Development Goals*

report 2015, retrieved from:

[http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20\(July%201\).pdf](http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%201).pdf)
(retrieved on July 13, 2015)

UN (2015b): Transforming our world: The 2015 Agenda for Sustainable Development, retrieved from: <https://sustainabledevelopment.un.org/content/documents/7891TRANSFORMING%20OUR%20WORLD.pdf>, (retrieved on August 3, 2015)

UN (2015c): We can end poverty, Millennium Development Goals and beyond 2015, retrieved from: <http://www.un.org/millenniumgoals/bkgd.shtml> (retrieved on July 4, 2015)

UNDESA (2015): High level political forum on sustainable development, retrieved from: <https://sustainabledevelopment.un.org/hlpf> (retrieved on July 22, 2015)

UNDESA (2015): Higher education sustainability initiative, retrieved from: <https://sustainabledevelopment.un.org/sdinaction/hesi> (retrieved on August 3, 2015)

UNDP (2015): Human Development Reports, retrieved from: <http://hdr.undp.org/en> (retrieved on September 25, 2015)

UNECE (2005): UNECE Strategy for education for sustainable development, CEP/AC.13/2005/3/Rev.1

UNECE (2013): Empowering educators for a sustainable future, Tools for policy and practice workshops on competences in education for sustainable development – Strategy for Education for Sustainable Development, United Nations, ECE/CEP/196

UNESCO (1996): Learning: the treasure within, Report to UNESCO of the International Commission on Education for the Twenty-first Century, Highlights, France, UNESCO Publishing

UNESCO (2005): United Nations Decade of Education for Sustainable Development (2005-2014): International Implementation Scheme, ED/DESD/2005/PI/01

UNESCO (2006): Framework for the UN DESD International Implementation Scheme, ED/DESD/2006/PI/1

UNESCO (2009): Bonn Declaration, retrieved from: http://www.desd.org/ESD2009_BonnDeclaration080409.pdf (retrieved on July 21, 2015)

UNESCO (2014): Roadmap for Implementing the Global Action Programme on Education for

Sustainable Development

UNESCO (2015-): Three terms and one goal, retrieved from: <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/three-terms-one-goal/>, (retrieved on July 21, 2015)

UNESCO (2015-): Education for Sustainable Development, retrieved from: <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/education-for-sustainable-development/> (retrieved on July 21, 2015)

UNEP (2015): Global University Partnership on Environment and Sustainability (GUPES), retrieved from: <http://www.unep.org/training/programmes/gupes.asp>, (retrieved on October 15, 2015)

UNFCCC (2011): Governing Instrument of the Green Climate Fund, retrieved from: http://gcfund.net/fileadmin/00_customer/document_s/Key_documents/GCF_Governing_Instrument_web.pdf (retrieved on July 21, 2015)

University of Glasgow (2014): Glasgow becomes first UK university to divest from fossil fuel industry, retrieved from: http://www.gla.ac.uk/news/archiveofnews/2014/october/headline_364008_en.html (retrieved on July 21, 2015)

Wals, A. (2009): Review of Contexts and Structures for Education for Sustainable Development 2009, Preparing for a Sustainable World, UNESCO (ed.)

Wals, A. (2013): Sustainability in higher education in the context of the UN DESD: a review of learning and institutionalization processes, Journal of Cleaner Production, 62, 8-15

ELTT Partners

The ELTT program is offered by the Sustainability Team of UZH in collaboration with the UZH Faculty of Science and the Faculty of Economics, Business Administration and Information Technology. International partner organizations support ELTT with their expert input and provide a platform with some hundred universities that are eager to exchange experience:

- COPERNICUS Alliance – European Network on Higher Education for Sustainable Development
- Global RCE Service Centre at United Nations University – Institute for the Advanced Studies of Sustainability
- GUPES: Global University Partnership for Environment and Sustainability - UNEP
- IAU – The International Association of Universities

Publishing details

Editors: Clemens Mader, Linde Warland, Lorenz M. Hilty

Authors: Linde Warland, Clemens Mader

University of Zurich, Sustainability Team

Contact: info@sustainability.uzh.ch

Please cite as: Warland, L., Mader, C. (2015): From Global Programs in ESD to Local Implementation in Higher Education, Part I. In: Mader, C., Warland, L., Hilty, L., ELTT Education for Sustainable Development Handout Series, University of Zurich.



ELTT Handout Series by Clemens Mader, Linde Warland and Lorenz M. Hilty is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/).