

# SUSTAINABLE MEDITERRANEAN

MEDITERRANEE DURABLE • ΒΙΩΣΙΜΗ ΜΕΣΟΓΕΙΟΣ • MEDITERRANEO SOSTENIBILE المتوسطة المستدامة



Residential Training Workshop on Universities  
& Education for Sustainable Development  
Amfissa, Greece, 23-28 May 2010

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Séminaire Résidentiel de Formation sur les Universités  
et l'Education pour le Développement Durable  
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Universities are institutions of long and complex history and in principle serve the society within which they operate. Today, in the beginning of the 21<sup>st</sup> century Universities are invited to participate in the overall education of society and its Sustainable Development. The challenge is to adapt and deliver, as soon as possible in the right direction. This will require the involvement of all its members (academia, students, staff, etc.), who create the enabling environment for their operation (Governments, other authorities, donors, etc.) and the wider public.

In order to approach the concept of a “sustainable university” and the closely related concept of a “whole institute approach”, the University of Athens, the Baltic University Programme (BUP) and MIO-ECSDE (MEDIES Secretariat) organised the *Residential Training Workshop on ‘Universities and ESD’*, in Amfissa, Greece, 23-28 May 2010, with the support of the Centre of Environmental Education (CEE) of Amfissa.

The workshop was a follow-up of the successful Leonardo course *Training on ESD through an inter-regional perspective: Baltic & Mediterranean* (Uppsala, 6-12 Oct 2008) and one of the recommendations of the last meeting of the Network of the Mediterranean Universities for Sustainable Development MEDUNNET (Athens, 21-22 Oct 2009).

In total, 48 experts -lecturers, researchers and university staff from the BUP and the MEDUNNET networks all involved in ESD- participated in the training, coming from 19 countries: Austria, Belarus, Croatia, Denmark, Estonia, Finland, Greece, Latvia, Lebanon, Lithuania, Poland, Romania, Russia, Slovakia, Slovenia, Sweden, Turkey and the UK.

The training workshop aimed to:

- examine the integration of ESD in tertiary education within the framework of the UN Decade on ESD (2005-2014) and the UNECE Strategy on ESD;
- explore the concepts of the “whole institute approach” and “sustainable university”;
- share experiences on ESD, educational practices, policies, research, etc. through particular universities’ case studies.

To this end, the workshop sessions were structured in three thematic pillars:

**I. Curriculum & Programmes** of a SU: *Balanced approach of the content of SD; Official syllabus and curriculum as well as “hidden” ones; Variety in educational techniques and methods; Development of student and professor competences, etc.*

**II. Governance, Processes & “Culture”** of a SU: *Operation & Administration practices; Composition and operation of the university community; University aspects and functions as a technical and economic unit; Opening of the university to society, interactions with local community and culture, etc.*

**III. Infrastructure** of a SU: *Energy and water use efficiency; Sustainable use of material and recycling; Ecological footprint; environmentally sound healthy food in canteens; Green spaces, etc.*

For each thematic pillar a key presentation was followed by an engaging workshop that stimulated interest and discussion. Furthermore, the participants had prepared case studies from their institutes related to ESD in Universities on the three pillars. This process increased “ownership” on their behalf and stimulated a meaningful sharing of experiences. The week-long training included also roundtables and workshops on these pillars. A special session was dedicated to the ESD Competences of Educators, during which participants worked on the latest working text on ESD Competences drafted by the UNECE Expert Group.

Hosted in the Centre of Environmental Education (CEE) of Amfissa, the participants had the opportunity to get a firsthand experience from the activities of the CEE, its educational projects, processes, governance issues and relations with the local society.

The training was financially supported by the Swedish International Development Cooperation Agency (SIDA), the Åbo Akademi University, the Novia University of Applied Sciences, the European Commission - DG Environment, the Municipality of Amfissa, and it was hosted and supported in-kind by the CEE of Amfissa.

The training was evaluated very positively by the participants who requested as a follow up a strengthening of cooperation amongst them -mainly through the BUP and the Mediterranean networks- as well as subsequent trainings and other projects in more countries. The present issue of *Sustainable Mediterranean* is one of the first concrete outcomes, and includes all key presentations and case studies presented during the training.

Prof. Michael Scoullos

Les universités sont des institutions avec une longue et complexe histoire et, en principe, elles servent la société dans laquelle elles opèrent. Aujourd'hui, au début du 21<sup>ème</sup> siècle, les universités sont invitées à participer à l'éducation globale de la société et à son développement durable. Le défi reste à bien s'adapter et à produire des impacts positifs dans les plus brefs délais. Cela nécessitera la participation de tous leurs membres (professeurs, étudiants, personnel, etc), de ceux qui créent l'environnement propice à leur fonctionnement (gouvernements, autres autorités, donateurs, etc.) et du grand public.

Afin d'aborder le concept d'une «université durable» et celui, étroitement lié, d'une «approche d'institut intégré» (Whole Institute Approach), l'Université d'Athènes, le Baltic University Programme (BUP) et le MIO-ECSDE (le Secrétariat du MEDIES) ont organisé le *Séminaire Résidentiel de Formation sur 'Les universités et l'EDD'*, à Amfissa, en Grèce, le 23-28 mai 2010, avec le soutien du Centre d'Éducation Environnementale (CEE) d'Amfissa.

L'organisation de cet atelier suit à la réussite du cours Leonardo relatif à "La Formation sur l'EDD à travers une perspective inter-régionale: Baltique et Méditerranée" (Uppsala, 6-12 oct. 2008) et à une des recommandations de la dernière réunion du Réseau des Universités Méditerranéennes pour le Développement Durable MEDUNET (Athènes, 21-22 oct. 2009)

Un total de 48 experts ont participé à la formation – enseignants, chercheurs et personnel des universités des réseaux BUP et MEDUNET, tous impliqués dans l'EDD – en provenance de 18 pays: Autriche, Bélarus, Croatie, Danemark, Estonie, Finlande, Grèce, Lettonie, Liban, Lituanie, Pologne, Roumanie, Russie, Slovaquie, Slovénie, Suède, Turquie et Royaume-Uni.

L'atelier de formation visait à:

- examiner l'intégration de l'EDD dans l'enseignement supérieur, dans le cadre de la Décennie des Nations Unies sur l'EDD (2005-2014) et la Stratégie de l'UNECE sur l'EDD;
- explorer les concepts de "approche d'institut intégré" (whole institute approach) et de "Université durable" (UD);
- partager des expériences sur l'EDD, des pratiques éducatives, les politiques, la recherche, etc., à travers des études de cas particuliers des universités.

A cette fin, les sessions de l'atelier étaient structurées en trois piliers thématiques:

**I. Curriculum et Programmes** d'une UD: *Approche équilibrée du contenu de développement durable; Programme et curriculum officiels et aussi "cachés"; Variété des techniques et des méthodes d'enseignement; Développement des compétences des étudiants et des professeurs, etc.*

**II. Gouvernance, Processus et "Culture"** d'une UD: *Pratiques d'Opération et d'Administration; Composition et opération de la communauté universitaire; Aspects et fonctions de l'Université en tant qu'unité technique et économique; Ouverture de l'Université vers la société, interactions avec la communauté et la culture locale, etc.*

**III. Infrastructure** d'une UD: *Efficacité de consommation d'énergie et d'eau; Utilisation durable du matériel et recyclage; Empreinte écologique; aliments écologiques et sains servis aux cantines, espaces verts, etc.*

Chaque pilier thématique a été introduit par une présentation clé qui a été suivie par un atelier stimulant l'intérêt et la discussion. En outre, les participants avaient préparé des études de cas relatifs à leurs instituts et à l'EDD dans les universités, concernant les trois piliers. Ce processus a augmenté le sens d'«appropriation» et a stimulé un important partage d'expériences. Cette formation, de la durée d'une semaine, comprenait également des tables rondes et des ateliers sur ces piliers. Une session spéciale a été consacrée aux compétences des éducateurs d'EDD, au cours de laquelle les participants ont travaillé sur le dernier texte de travail rédigé par le Groupe d'experts de l'UNECE sur les compétences en matière d'EDD.

Hébergés au Centre d'Education Environnementale (CEE) d'Amfissa, les participants ont eu l'occasion d'acquérir une expérience directe sur les activités du CEE et ses projets éducatifs, les processus, les questions de gouvernance et les relations avec la société locale.

La formation a été soutenue financièrement par l'Agence Suédoise d'aide au Développement International (SIDA), l'Université Ebo Akademi, l'Université Novia de Sciences Appliquées, la Commission Européenne – DG Environnement, la Municipalité d'Amfissa, et a été hébergée et supportée à travers la contribution en nature du CEE d'Amfissa.

La formation a été évaluée très positivement par les participants qui ont demandé, comme suite de cet atelier, un renforcement de la coopération entre eux, principalement à travers le BUP et les réseaux Méditerranéens ainsi que par des formations ultérieures et d'autres projets dans plusieurs pays. Cette édition du Bulletin d'Information *Méditerranée Durable* est l'un des premiers résultats concrets, et il comprend toutes les présentations clé et les études de cas présentés au cours de la formation.

Prof. Michael Scoullas

## ACRONYMS

<b>AISHE</b>	Audit Instrument for Sustainability in Higher Education
<b>BSUN</b>	Black Sea Universities Network
<b>BSI</b>	British Standards Institute
<b>BUP</b>	Baltic University Programme
<b>CEE</b>	Centre of Environmental Education
<b>EMPS</b>	Environmental Management Policy and Sustainability
<b>ESD</b>	Education for Sustainable Development
<b>HE</b>	Higher Education
<b>ICTs</b>	Information and Communication Technologies
<b>KRCRAS</b>	Karelian Research Centre of Russian Academy of Sciences
<b>MEDIES</b>	Mediterranean Education Initiative for Environment and Sustainability
<b>MEDUNNET</b>	Mediterranean Universities Network for Sustainable Development
<b>MIO-ECSDE</b>	Mediterranean Information Office for Environment, Culture & Sustainable Development

<b>NWPI</b>	Northern Water Problems Institute
<b>RCE</b>	Regional Centre of Expertise
<b>SAQ</b>	Sustainability Assessment Questionnaire
<b>SD</b>	Sustainable Development
<b>SIDA</b>	Swedish International Development Cooperation Agency
<b>SMS</b>	Sustainability Management System
<b>SU</b>	Sustainable University
<b>UN CSD</b>	United Nations Commission on Sustainable Development
<b>UN DESD</b>	United Nations Decade on Education for Sustainable Development
<b>UNECE</b>	United Nations Economic Commission for Europe
<b>UNU</b>	United Nations University
<b>UNCED</b>	United Nations Conference on Environment and Development
<b>WSSD</b>	World Summit on Sustainable Development



Group photo of the participants of the Residential Training Workshop on Universities and ESD.

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# KEY PRESENTATIONS ON THE THREE THEMATIC PILLARS

## WHAT MAKES A UNIVERSITY SUSTAINABLE?

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**Key words:** Sustainable University (SU), Education for Sustainable Development (ESD), criteria

To answer this question we have to define what a sustainable university is. To my understanding it is a University which contributes to Sustainable Development (SD), a university which is able to deliver the message of integration and progress in all aspects of SD, to promote socially just, economically prosperous and environmentally benign development, through the concepts, principles and methods of Education for Sustainable Development (ESD) and where its staff, governance, operations and infrastructures reflect commitment to SD. The concept of a Sustainable University (SU) could also be a driver for the “renaissance” of Academic Education combined with an alternative approach. To obtain it, it will require time and the most important step is the decision to start the process and place it in the right route with none of the important elements totally neglected. Of course, the balanced development of all is the optimal. However, a well understood “optimistic” approach could be followed starting from the “strong” points of each system which needs to be safeguarded and consolidated while gradually moving into revision and reform of the elements that deviate more from the sustainable approach.

Some changes bringing us closer to a SU have happened already, and we can address them in various ways:

- Historically
- As an alternative to the global “university crisis”
- As a result of the introduction of new “themes”
- As a dynamically evolving process of successive stages of awareness of universities-teachers-students and their interaction with the environment (social-economic-cultural) at various levels (from local to international).

If we wish to follow them in a more schematic way we may identify some steps:

- Educational institutes with programmes that emphasise social/moral and educational dimensions consistent with the concept of “sustainability” or with some of its elements.
- Antiauthoritarian education, Anti-racist, Peace, Gender, Citizen (citizenship), etc.
- Educational institutes focusing on practical interventions & improvements of human life conditions: Health education, Consumer education, etc.
- Green and Eco-Schools: Environmentally advanced with “improved” programmes & schools, focusing on

improvements in infrastructure and/or pro-environmental projects and/or learning from nature.

- Educational institutes following the whole institute approach / Emphasis on institute development through internal consistency. It includes many of the previous items as well as school governance, natural resource management at institute level, active relationship with the local society, etc.
- Educational Institute for ESD: Promotes all aspects of the ESD, with emphasis on the ‘strategic’ combination of space, content, software, learning processes and a shift of paradigm (it reflects to various degrees the principles of SD).
- Sustainable Educational Institute/Change towards SD from within.
- It should be clearly understood that this is not a linear or “one-way” approach without variations. In fact, for each university, considerable specific characteristics govern its evolutionary process toward sustainability, if the vision, the goal and the willingness to proceed are there.

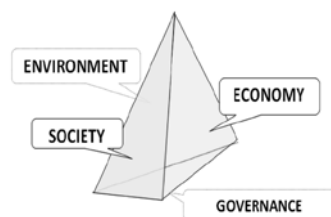


Fig 1. Sustainable Development represented as a pyramid.

If we consider the SD pyramid (fig 1), we understand the university as a locomotive to bring in the necessary elements and to build it as a key worker/ builder, and in some cases, architect. In other cases, even a well designed structure needs to be renovated and enlarged.

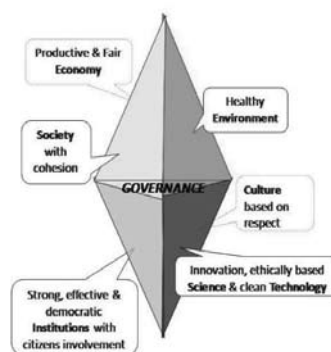


Fig 2. Education for Sustainable Development represented as a double pyramid, or diamond.

We can also consider ESD as a double pyramid (fig 2) on the top of which are the three dimensions of SD and in the lower part the tools/areas where we need to work hard in order to keep and maintain the upper part.

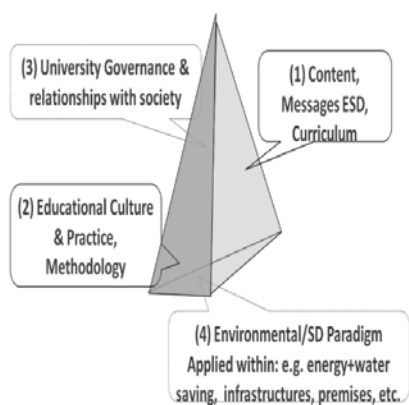


Fig 3. The four components of a Sustainable University, represented as a pyramid.

It is obvious that the SU (fig 3) should “respond” to the same architecture “servicing” and developing:

1. The proper content in accordance with the three dimensions of SD and therefore, reforming its curricula according to ESD principles.
2. Adapt its educational culture and the used methodologies to deliver the new “messages”.
3. Strengthen and /or reform its governance structures as well as its relationship with society, offering human performance for sustainability.
4. Improve, renovate and develop infrastructures and systems reflecting efficient sustainable consumption and performance approaches.

The four components/facets of the SU pyramid are developed further herewith:

#### 1. Content & message of ESD/ Curriculum

- Balanced approach of the content of SD: Economy-Society-Environment through the tools/mechanisms: Culture, Institutions, Innovation/ Science-Technology.
- Official syllabus and curriculum as well as the “secret” program and “hidden” educational practices.
- Developing competences of students overall and balanced in order to learn to experiment and adopt critical attitudes towards quality of life, patterns of production and consumption, management approaches, in the present and especially, for the future.

#### 2. Educational Culture & Practice, Methodology

- Professors’ competences, training and lifelong learning.
- Variety in educational techniques and methods-experiential and participatory methods, development of critical thinking, tolerance, respect of cultural diversity, building on experiences from the natural and urban environment and behavioral models
- Experience to be developed within the University. Research and experimentation as part of the edu-

cational paradigm of the University itself.

- Wider university culture that generally integrates the principles and methods of ESD.

### 3. University Governance, internal processes & external relationships with the society

- Composition and operation of the university community at the course level or even lower, which bring democratic processes, accountability both individually and collectively, recognize and reward effort.
- Operation & Administration model followed in the university.
- The role of the University Direction (Leadership and Administration) and other stakeholders in creating and maintaining the vision and prerequisites of SD.
- Professors’ relationships: based on cooperation, understanding and solidarity; Transparent and fair procedures.
- Development and implementation of internal quality criteria (internal progress monitoring/bench markings).
- The university aspects and functions as a technical and economic unit. Finance options in line with sustainability.
- Opening of the university to the society and interactions with local community and culture.

### 4. Applied environmental/SD paradigm, Infrastructures, premises, etc.

- Energy efficiency; passive solar architecture of buildings.
- Environmentally friendly use of material, recycled materials, etc.
- Ecological footprint.
- Economy of water; rainwater harvesting.
- Use of non toxic paints and products.
- Collection and treatment of toxic substances from Laboratories, etc.
- Care for environmentally sound healthy food in canteens, etc.
- Green spaces.
- Environmentally friendly university vehicles.

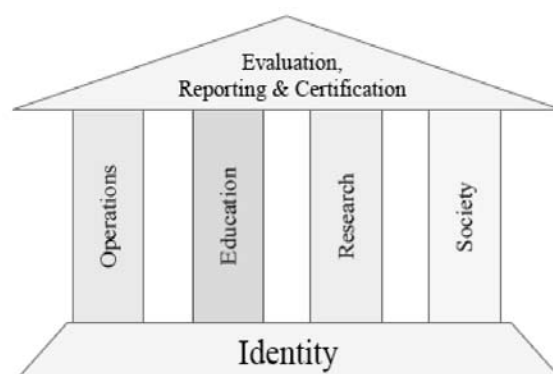


Fig 4. The components of Sustainable University, represented as a temple.

Few other “architectures” for the SU have been proposed which identified already or eventually, analyse some of them in few more components, for instance the one proposed by the Dutch National Working Group for Criteria for Sustainable HE (fig 4).

The discussion on various alternative models carried out at the Amfissa Residential Workshop on concluded that the pyramid one is the most concessive and the only one allowing the integration and interaction of its various components, as is the case of the real world.

In conclusion, the approach towards a SU should combine a series of characteristics:

- It should not be a vague and ad-hoc approach, but having a specific vision, goals, clear road map, conscious educational staff and secured “mechanisms” (distinct change channels), and progress indicators.
- It requires courage and substantial willingness to improve with whatever changes needed “within” and not “reverse the reversal” (change the forms without a corresponding change in the substance).
- It should be based on agreed principles as developed by UNESCO and UNECE in its ESD Strategy. The UNECE Strategy for ESD (2005) is particularly useful but not a “panacea” or “Bible”. It should be implemented/ adopted, if needed according to the national and local conditions and possibilities
- It should ensure continuity and consistency. This would allow for the official curriculum but also

for the 'hidden' educational practices & curricula to come closer, and allow ideological rigor and organizational discipline that are needed for any development of serious effort to bear fruits.

- It should combine as “starting building blocks” the areas already developed while are closer to sustainability and progressively reform the other aspects which might deviate more from the sustainable approach. This will determine to a certain extent also the identity of each University.
- The literature is rich in suggestions and examples of ESD deriving mainly from Environmental Education (EE). It should be inspired by the good examples of ESD and/or EE making at the same time the necessary distinctions, extensions, adaptations and differentiations.

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The three organisers of the Residential Training. From left to right: Mr Michalis Theocharopoulos, CEE of Amfissa; Ms Christine Jacobsson, BUP; prof. Michael Scoullos, University of Athens & MIO-ECSDE / MEDIES.



# SUSTAINABILITY IN THE DNA OF THE UNIVERSITY

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**Key words:** Whole Institute Approach, integration, innovation, pluralism, sustainability as "core business"

## Introduction

Sustainability is not a new challenge. Over the last twenty years, and as a result of the Rio Summit (UNCED 1992), there has been global engagement with this agenda which acknowledges the intricate connections between economic, social and environmental systems. A sense of urgency underpinning the 2002 World Summit on Sustainable Development further committed nations to strive towards positive and sustainable futures (WSSD 2002).

In practice, however, universities struggle to respond to such commitments and, to date, no university has managed to align its 'core business' with the principles and practice of SD. If the sector is to live up to its commitments and wider social expectations and make a significant response to the sustainability imperative, far more will be required than the signing of international declarations or investment in pilot projects. This paper highlights the need to embed sustainability in the 'DNA' of academic institutions, to ensure that that policy, decision-making and practice are aligned with commitments towards sustainability. Progress on these aims requires recognition that universities interact with broader academic communities and processes, as this is a crucial lever for cultural change within individual institutions.

## The University of Gloucestershire: Living and Learning Sustainability

Over the past 20 years, the University of Gloucestershire has pioneered and progressively extended ways to promote sustainability through its curriculum and campus activities. The impulse to introduce sustainability within the curriculum began with environmental champions in the 1980s and continued through the 1990s while the University was still a college of HE. Some of this work was captured in the seminal series *The Environmental Agenda* (Richardson & Ali Khan 1995).

During this time, the University became a seed bed for experiments in sustainability education and practice: Cultivating cutting-edge work across increasingly diverse subject areas such as landscape architecture, tourism and leisure studies, linguistics and ICT; Initiating interdisciplinary discussions about 'education for sustainability' and 'sustainability literacy' - not just across the institution but also across the sector; Introducing energy efficient technologies and practices and providing a green travel plan as well as the establishment of a SD Committee; Receiving formal accreditation from the British Standards Institute (BSI) for establishing per-

formance improvement systems across campus and curriculum. The University was the first in the United Kingdom to attain such accreditation.

Acknowledgment of the role of sustainability champions in driving innovative practice is critically important and recognition came from a number of sources. In sustainability circles, the UK Green Gown awards scheme gave commendations for two university modules (Language and Ecology 2007; Skills for Sustainability 2008) and for its edited volume *Greener by Degrees: Exploring Sustainability through HE Curricula* (Roberts & Roberts 2008). An extremely positive affirmation came from the mainstream academic context, when two of the University's sustainability educators were awarded prestigious National Teaching Fellowships in 2009.

However, to claim expertise and build systemic change requires the alignment of 'bottom-up' and 'top-down' efforts, and a critical move to connect: (i) the long history of grass-roots pedagogic innovation addressing human-environment interactions, sustainability and quality of life; with (ii) the introduction of integrated strategic leadership for the whole institution, positioning sustainability as a strategic priority across corporate and academic portfolios.

In 2007, the University made a strategic commitment to connect these pathways for change towards sustainability and appointed a new leadership post to facilitate further changes. The step change in commitment from the Senior Management Group occurred following a dialogue workshop facilitated by the UK's HE Academy<sup>1</sup>. The Group reflected on the University's achievements, experience and learning in sustainability over 20 years and recognised that innovation was transient - in essence, champions and external funding were keeping the agenda alive. As in most universities, the sustainability projects had not influenced the core experiences of students but had mostly occurred on the fringes of the curriculum or institutional structures and their potential legacy had not been safeguarded.

Six months later, ongoing commitment and strategic vision was affirmed, signalling a change of gear and ushering in a series of new actions to transform the university in favour of sustainability. These commitments were formalised in *Promising Futures: a Sustainability Strategy for the University of Gloucestershire 2009-2015*. The ambitious strategy strives to embed sustainability into the institutional DNA by introducing change and support mechanisms. It aims to shift institutional practice

1. The workshop was part of a series of similar events which is reported in Brooks & Ryan (2008).

so that all learners can develop knowledge and skills to meet the challenges of sustainability and sustainability is modelled across all professional and academic departments as well as campuses.

The strategy outlines a vision whereby:

‘The University of Gloucestershire embraces sustainability as a concept concerned with shifting mind-sets as well as changing unsustainable practice. Its ultimate goal is to contribute, through its operational and educational activities, to a more *promising future for all* - underpinned by a more socially just, healthy, prosperous, and biodiverse world.’ (*Promising Futures* 2008, p.1)

#### Promising Futures: A Vision

The University of Gloucestershire embraces sustainability as a concept concerned with shifting mind-sets as well as changing unsustainable practice. Its ultimate goal is to contribute, through its operational and educational activities, to a more **promising future for all** - underpinned by a more socially just, healthy, prosperous and biodiverse world.

The University is making a **distinguished contribution** to sustainability as acknowledged by rankings, assessments and academic writings. It is known for its expertise in people’s engagement with and people’s responses to sustainability and for cross-faculty involvement in this area. Students and staff across the University have an opportunity to **inform and contribute** to the University’s sustainability agenda.

The University is **internationally recognised** for its campus management efforts as well as education, research and public engagement initiatives in this area. This increased international profile has contributed to attracting more postgraduate and undergraduate students as well as further and higher education partners.

The University attracts **significant funding** as higher education and research funding agencies have confidence in the University’s sustainability record and ability to inform policy and practice through applied cross-disciplinary research.

The University **models sustainability** in its administration, operations and procurement procedures as well as corporate decision-making. Sustainability forms part of the quality assurance and course validation processes. It has a carbon management plan, targets to improve its environmental performance in the areas of transport, waste, water and energy and a commitment to capital development which is aligned to sustainability principles. The University was the first in the UK to release a Triple Bottom Line report and establish an ISO Sustainability Management System (SMS).

All students have opportunities to **experience sustainability** and develop professional and personal responses to this area. The University was the first UK institution to **embed sustainability** into all its course offerings and offer work placements and professional support for students and staff in this area. The Learning Centres and other academic support areas enhance the sustainability experience.

Through its **partnership approach** to sustainability, the University has strengthened its links with external stakeholders and is seen as a facilitator of opportunities in this area, particularly for colleges and schools in the region.

Building upon its outreach commitments, the University has extended its corporate responsibility activities to include sustainable development. It is working more closely with community groups, cultural organisations and agencies to address quality of life and social justice issues. (*Promising Futures* 2008, p.2)

#### What could Sustainability in the DNA look like?

Once ‘in-principle’ support was obtained from senior management, the challenge was to create a stronger sense of what ‘Sustainability in the DNA’ could like and how it might be understood across the University. The approach was to: (i) build upon the innovative work of individual staff and the collective learning from these experiences; and (ii) develop institutional frameworks and support mechanisms to transform governance, decision-making and learning opportunities for students.

It was necessary to take various steps to demonstrate a ‘whole-of-institution’ approach to sustainability and to recognise that it required more than just connecting existing activities. Reorienting the structures to facilitate integrative planning and responses was also at the heart of this ambition. The University was seeking, ultimately, to changing mindsets and practice by changing both the architecture and culture of the institution.

##### (i) Reorienting the Architecture

The *Promising Futures* Strategy provided a vision (Box) and a plan for scaling up efforts in environmental management, procurement, marketing, catering, strategy, operations, outreach, partnerships, education and research. Figure 1 outlines the enormity of the challenge and provides a list of discrete changes that were prioritised to enable the University to embed sustainability within its DNA.

To support this ambitious strategy, a fundamental shift needed to take place within the guiding documents that laid down the pathways for institutional development. The University’s Strategic Plan (2009) and Corporate Plan (2009) were re-written with this strategic commitment reflected across all key strands. Sustainability had begun to influence how the institution identified itself and how it conducted its core business.

The initial steps of the process also included setting the vision and devising an action plan for embedding sustainability within the core business of the institution. This was followed by opportunities for stakeholder input, new staff appointments and internal capacity-building. A sustainability team was created to support implementation, including a Sustainability Volunteering Officer, Partnerships and Public Engagement Coordinator, and senior posts to oversee research, carbon management and curriculum development.

The strategy and action plan was approved by Executive and supported by Senior Management. Resources were allocated and efforts commenced to realign structures and processes to promote more ‘joined-up’ thinking across the institution. Quick wins were implemented swiftly and centrally. These included the drafting of new academic and corporate policies; the redrafting of the SD Committee TORs; a review of water, energy, procurement policies so that they were more aligned to one another and to the sustainability focus. Ethical investment and fair trade status were confirmed and sustainable procurement became the only form of procurement. The latter significantly influenced a new choice of com-

pany when the University's catering contract across all its campuses was due for renewal.

A regional platform was set up under the auspices of the RCE Severn, with the intention to work in partnership with community, government and business on this agenda and to provide another mechanism for informing developments across the University. The RCE meets twice a year and its members are invited to attend various activities at the University, such as the 2009 Student Engagement Forum, which resulted in an action plan to refresh student sustainability activities both on- and off-campus.

## (ii) Challenging the Culture

In addition to such structural changes, shifts of organisational culture are absolutely critical to change management (Dunphy et al 2003; Doppelt 2003). 'Empowerment' and 'engagement' are terms frequently associated with sustainability and managing change for sustainability (Bekessey et al 2003; Tilbury and Wortman 2005; Sharp 2002). These principles are seen as integral to a process which requires participation and ownership of all parties involved in, or influenced by, the institution. To

increase shared understanding, the *Promising Futures Strategy* was drafted after consultation with internal and external stakeholders through a series of workshops and forums over six months. This informed the development of the project plans as well as the strategy that underpins them.

The experience at the University of Gloucestershire reaffirmed the thinking that, in academic institutions, systemic change can only flourish where pluralism and creativity is encouraged (although this can often bring complexities in the field of curriculum development, as discussed below). Sustainability dialogues across the University of Gloucestershire served a dual purpose: to bring together staff, students and others to identify common visions for the future of the institution aligned with sustainability; and to promote and respect difference in the way people decide to engage with sustainability.

The experience showed that some see it as a professional responsibility to rethink their planning and practice in terms of sustainability; whilst others had a deep personal or faith-based commitment to living sustainability on a daily basis. The role of the institution evolved to one of

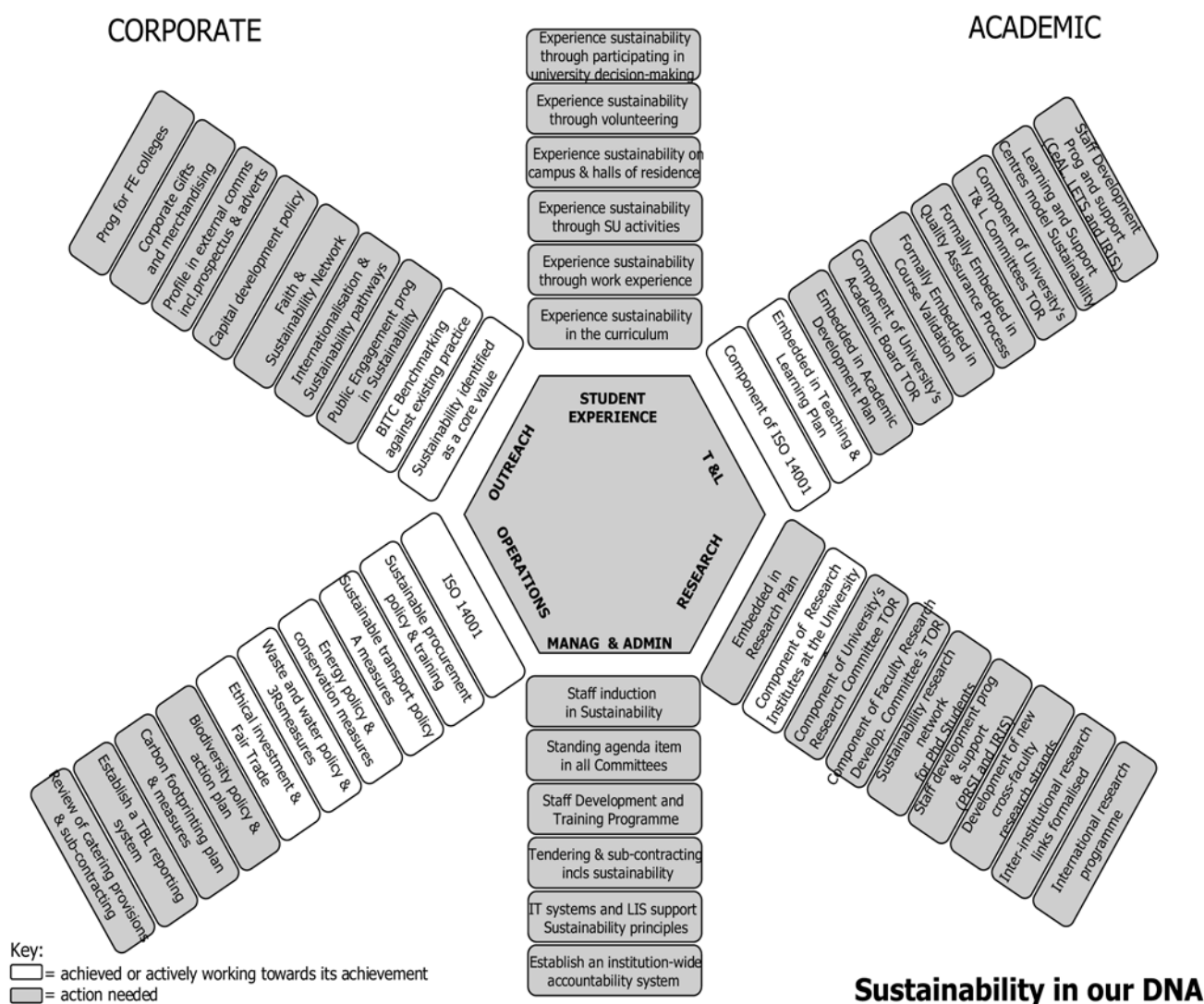


Figure 1: What could Sustainability in the DNA look like?



providing ongoing opportunities for such dialogue and encouraging reflection upon individual and collective responsibilities that relate to sustainability. Attempting to connect top level decision-making with daily experiences and professional practice requires the creation of spaces for individuals and groups to define for themselves and determine how they will respond to this agenda (Tilbury et al 2005). Ultimately, understanding how power and participation play out in the process of change management is critical – these are the threads with which to weave renewed cultural webs for sustainability.

Unsurprisingly, the experiments and experiences of the past had laid the foundations for new ways of working at the University of Gloucestershire. For example, it was clear that alternative forms of institutional leadership were required, informed by a more sophisticated understanding of how the power and participation of stakeholders influences the effectiveness of change towards sustainability. Key to this new way forward was the creation of platforms for staff engagement. The Faculty Action Plan process was piloted in 2008 at the Oxstalls campus and is being progressively implemented across all University sites during 2010. This process brings together administration, support and academic staff (from the cleaners to the professors) in one room. All staff belonging to the campus are invited to attend and contribute. During this process they (i) discuss what sustainability means to them, to build dialogue and capacity; (ii) identify priorities for their sustainability practice; (iii) specify actions which will be implemented in the following academic year to advance sustainability; and (iv) agree to work together to achieve these actions. The Dean of each campus is mandated to lead the process, using the Sustainability Team as support and facilitation to help progress the discussions. At the heart of these participatory platforms is an intention to decentralise decision-making associated with sustainability and to thus to engage staff more widely and deeply in this agenda.

### **Sustainability as Academic 'Core Business'**

Creating opportunities for sustainability learning in HE curricula is one of the greatest challenges in terms of changing the orientation of our educational systems as a whole. Even under the auspices of the UN Decade of ESD, 2005–2014, HE institutions are struggling to improve opportunities for learning about and for sustainability (Wals, 2009). As Wals & Jickling (2002) have pointed out, the sheer flexibility and range of the conceptual terrain around 'sustainability' means that it can serve both as inspiration and as frustration. It can take on myriad forms across different subject areas and although this seemingly endless flexibility is the source of its greatest potential as an innovative pedagogic tool, it requires dedication and energy to harness that potential in ways that draw out the concerns of existing disciplines and emergent interdisciplinary fields of study.

Over the years the University of Gloucestershire has hosted pilot projects which provided small yet important

learning steps to progress the ambitions of sustainability education in different subject areas. More recent efforts have been directed at consolidating important links between the broader educational development functions of the institution and the possibilities for innovation to gradually raise the focus across the curriculum on coherent parameters and principles for effective sustainability education.

Various tactics are now being employed to promote and support these wider changes to energise the ways that sustainability impulses are harnessed in the academic arena:

**For all academic staff:** There is now an institutional framework for sustainability education plus guidance linked to the national Quality Assurance Agency (QAA) benchmarks for undergraduate teaching in specific subject areas. These documents represent shared points of focus and dialogue for enthusiasts and newcomers to use and develop through their work with the aims and principles of education for sustainability.

**For programme teams and departments:** Professional development seminars in education for sustainability are being provided for specific programmes and subject areas, in tandem with tailored mentoring and support to reorient curricula and raise the awareness of educators and students about sustainability education. Changes can be seen, for example, in the undergraduate Business Management programme, which has been reconfigured to address sustainability as a cross-curriculum theme in the first year.

**For academic leaders and developers:** Guidance is available in relation to the development, review and validation processes which are required for programme approval. Simple mapping tools have been developed, using internationally-agreed pedagogic principles as indicators, to help stimulate further curriculum innovation.

**For existing champions:** There is now higher level support and recognition of their path-finding work through internal annual awards for teaching and promoting sustainability, and chances to mentor colleagues will arise as the momentum increases.

**For researchers:** Establishment of the *International Research Institute in Sustainability* as a research hub is encouraging more bids, publications, seminars, collaborative research and consultancy, as well as a diverse range of external fellows and visiting scholars in sustainability and education for sustainability.

**For senior managers:** The explicit integration of education for sustainability within all academic and corporate policies, from Strategic and Corporate Plans, to research and teaching strategies, has given an important signal to affirm and guide future plans.

**For external partners:** Establishment of the *RCE Severn* connects the University with local and regional partners active in sustainability learning across the public, private and voluntary sectors. Over time, this type of partnership activity should expand the presence of 'real-world' sustainability issues within curriculum development.

**For students:** Curriculum enhancement is complemented by sustainability learning via new extra-curric-



Prof. Tilbury while coordinating the Workshop on Curricula & Programmes of Sustainable Universities.

ular initiatives (e.g. to promote energy-saving and biodiversity) and collaborations with other universities (e.g. the 2009 Student Engagement Forum), to provide a more coherent learning experience for students.

In essence, these initiatives are highly connected and are gradually deepening the culture of sustainability learning, across formal educational provision, social and professional learning of staff and students, and throughout our organisational practice. Over the longer term, this approach is set to yield further benefits, enticing colleagues to engage with education for sustainability in ways that draw out their own talents and concerns.

The reach and potential of these changes are significant and there are multiple benefits. In terms of benefits to the University, these initiatives should result in more motivated staff, growth of research income, stronger relevance of the curriculum to contemporary priorities, and enhancement of the institutional profile. Students benefit through increased employability and preparedness for work, more active and engaged ways of learning, plus depth and breadth of understanding around sustainability. The HE sector also benefits through the strategic efforts that are under way to link sustainability education and mainstream quality enhancement mechanisms,

and to extend the reach of sustainability education to wider communities of practice, including professional associations. This multi-pronged approach to change is helping to address the growing social need for graduates who will be able to tackle rising sustainability targets at national, regional and local levels across all professions and communities.

This paper has argued that there are currently significant and timely opportunities for HE institutions to take their good intentions to a deeper level and create pathways to embed sustainability as 'core business' within organisational structures and culture. To build learning organisations for sustainability will require the type of systemic view advocated by Senge (1990). In the case of universities, this means that the strategic view and the tactics adopted will be appreciative of academic contexts and communities. The University of Gloucestershire experience confirms that in parallel to this, there must be recognition that sustainability is a process of continuous improvement that benefits from cumulative experience – transforming *educational establishments* into vital, critical and creative *learning organisations* for sustainability cannot happen overnight.



# AUSTRIAN & INTERNATIONAL EXAMPLES FOR PROMOTING SUSTAINABLE UNIVERSITIES FROM A GOVERNANCE PERSPECTIVE

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**Key words:** Sustainable university (SU), international initiatives, governance, education for sustainable development (ESD)

## Abstract

In this paper we look at two Austrian and two international instruments for promoting sustainable universities (SUs). We present the Austrian webpage on SUs set up by FORUM Umweltbildung, the Austrian Sustainability Award initiated by the Ministry of Education and the Ministry of Environment, the US-initiated Sustainability Assessment Questionnaire for Colleges and Universities (SAQ) and the Dutch-initiated Audit Instrument for Sustainability in HE (AISHE). At the end of the article we compare these four initiatives from a governance perspective, differentiating between approaches focusing on actual activities versus frameworks which foster possible developments towards sustainability, top-down and bottom-up approaches, as well as differentiating between approaches for external assessment, peer assessment and self-assessment.

## 1. The Destination: A Sustainable University (SU)

A SU is ecologically sound, socially just and economically viable and continues to be so in the future. Although ambitious and committed pioneers in all areas of the university have started a variety of initiatives, sustainability is still far from being an integral part of universities' mission statements, and more importantly, of everyday life. Without internal networking and a coordination of these projects by the university as a whole, these projects remain isolated and are constantly jeopardised by reorganisation measures and/or budget cuts.

The path towards a SU is not located on given road maps. University-wide sustainability is rather a process of participatory and reflective learning characterized by several alternative routes. This learning process can be supported by initiatives striving to improve the sustainable development (SD) of universities. In what follows, we present two Austrian and two international measures for fostering sustainability in universities and analyse them under different governance aspects.

## 2. Two Austrian Measures for Developing SUs

### 2.1. The webpage on SUs set up by the FORUM Umweltbildung

FORUM Umweltbildung is an initiative of the Ministry of Education together with the Ministry of Environment. The webpage [www.umweltbildung.at/cgi-bin/cms/af.pl?navid=50](http://www.umweltbildung.at/cgi-bin/cms/af.pl?navid=50) showcases information on SD, ESD

and provides a “toolbox” for different activities as well as a number of best practice examples from all over the world. The homepage bundles suggestions for internal development, inviting university stakeholders to take action. The seven fields of activities have formed the base for the design of the Austrian Sustainability Award.

### 2.2. The Austrian Sustainability Award for Universities

The Austrian Sustainability Award – a joint initiative of the Ministry of Education together with the Ministry of Environment – was established in 2007 as a means of promoting and increasing awareness for sustainability processes in Austrian universities (ref above). The Sustainability Award recognizes long-term processes and improvements that mirror the internal learning and formation processes of the institution as a whole, concerning several aspects of university organisation:

1. Administration and Management
2. Curriculum and Instruction
3. Research
4. Structural implementation
5. Communication and Decision-making
6. Student initiatives
7. Regional Integration
8. European (International) Integration.

An interdisciplinary jury of sustainability experts decide on the winner in each category. The awards were first handed over in March 2008, and then in March 2010. Below, we present five examples of awarded projects in 2010.

#### 2.2.1. Common Activities of the four universities in Graz

Lecturers from the four universities in Graz (Technical University, University of Graz, Medical University and University for Music and Performing Arts) dealt with SD from a technical, medical, musical and an ethical and climatologic perspective. At the end, the rectors of the four universities held a panel discussion on the overarching topic of Sustainability. The aim of this lecture series was to give students and staff the possibility to get to know sustainability related research activities of the four universities, to trigger discussions with each other and to cross disciplinary and university boundaries. This lecture series is the kick-off for a number of joint initiatives. The project received the award in the category “Communication”.

#### 2.2.2. Innovative mobility concept of the University of Innsbruck

When the staff of the University of Innsbruck asked for more parking space, the vice-rector for infrastructure reacted by designing an innovative mobility concept, con-

sisting of a combination of public transport tickets heavily subsidized by the municipality, bicycle stands, bicycle lanes and an electronic car parking system. This offer was accepted by 400 members of the staff and so valuable green space surrounding the University could be saved. The project came in first in the category “Structural Implementation”.

#### 2.2.3. The study programme “Health Management in Tourism” of the University of Applied Sciences Joanneum, Styria

This two year programme teaches Change Management Competences, a critical approach towards material consumption, and a work-life balance where body, mind and soul stay healthy. Students had the task of preparing the university for the Austrian environmental performance award. They decided upon their own goals like saving of energy and material resources, substituting conventional products with organic and/or fair trade ones, and making their university become a role model in the region, including a co-operation with schools and their pupils. They developed a mission statement for the university integrating SD and designed an education concept for the primary and secondary schools in the region. At the schools they performed a play on the carbon footprint, initiated a competition for the pupils and arranged a final “Festival of the Future” to honour the winners. This project won the first prize in the category “Student initiatives”.

#### 2.2.4. Mentoring programme for women at the University of Vienna

The Centre for Gender Equality of the University of Vienna developed this mentoring programme in order to advance the scientific careers of women. Female junior scientists can apply to get into the 18 month mentoring programme. Each group of four mentees are mentored by one scientist to get strategic knowledge and build networks. The interdisciplinary groups are also offered seminars on key competences. Another aim of the project is to critically examine traditional mentoring relationships and gendered hierarchies within the university in the hope of reforming them. One of the next steps is to disseminate the findings of the project in an international context. This project got the first prize in the category “Administration”.

#### 2.2.5. RCE Graz-Styria

The Regional Centre of Expertise (RCE) on ESD Graz-Styria has been located at the Faculty of Environmental and Regional Sciences and Education of the University of Graz since 2009. It serves as a contact point between university and society, sharing information and experiences and promoting dialogue among regional and local stakeholders. The RCE Graz-Styria acts as a part of an international network 'Global Learning Space for SD' (GLS) including over 70 RCEs worldwide, which are coordinated by the United Nations University (UNU). The University of Graz got the award for the RCE in the Category regional integration. These examples show the broad spectrum of sustainability initiatives honoured by the Austrian Sustainability Award.

### 3. Two International Monitoring Systems as Means to Promote SUs

#### 3.1. The ULSF Sustainability Assessment Questionnaire (SAQ) for Colleges & Universities

The mission of the US-based Association of University Leaders for a Sustainable Future (ULSF) is to support sustainability as a critical focus of teaching, research, operations and outreach at colleges and universities worldwide through publications, research, and assessment. It is an outcome of the Talloires Declaration of 1990 and by April 2010 had 418 signatories in 52 countries worldwide ([www.ulsf.org/programs\\_saq.html](http://www.ulsf.org/programs_saq.html)). In contrast to the Sustainability Award described above, the SAQ is an internal assessment tool with the following aims:

1. Raise consciousness and encourage debate about what sustainability means for HE in practical and philosophical terms.
2. Give a snapshot of the state of sustainability on campus.
3. Promote discussion on next steps for the institution.

The SAQ is a predominantly qualitative questionnaire about the extent to which a college or university is sustainable in seven critical areas of HE:

1. Curriculum
2. Research and Scholarship
3. Operations
4. Faculty and Staff Development and Rewards
5. Outreach and Service
6. Student Opportunities
7. Institutional Mission, Structure and Planning.

#### 3.2. AISHE 2.0 (Audit Instrument for Sustainability in HE)

AISHE is another assessment instrument and can be used either as an internal tool (as an instrument for self-evaluation) or as an external tool, aiming at certification or benchmarking. It is also a tool for the development of a national or supra-national policy towards SD (<http://www.umweltbildung.at/cgi-bin/cms/af.pl?navid=50>).

According to AISHE a university has to fulfil four roles. Education and research are considered the two core activities, third is the university as an organization in itself (acting as an employer, a consumer of goods, a producer of waste, etc.), fourth is its role as a “member of society” being active in its own local community or abroad. Ideally, all of those four roles are based on a shared vision about the identity and the character of the university, usually expressed in a mission statement which includes a contribution to SD in society at large.

AISHE is based on a model for quality management, developed by the European Foundation for Quality Management, striving for continuous improvement. This process can be described with the “PDCA Cycle: Plan-Do-Check-Act” which are reflected in criteria for each module. By applying AISHE the university gets the following results:

1. A realistic image of the present situation regarding SD in the university

2. A description of the desired situation on an agreed later date (e.g. 1 or 2 years later), forming a basis for the formulation of a coherent policy on SD
3. Support for this policy from the assessment participants, who represent the management, the staff, the students and external stakeholders
4. If applied as an external assessment instrument (and if the requirements of a certificate level are met) the university receives the international Certificate of SD in HE which in turn,
5. Is a strong incentive for continuous improvement.

#### **4. Analysis of the four examples from a governance perspective**

We have chosen to compare the four initiatives from three formal perspectives in the context of Governance: (1) Approaches focusing on actual activities versus providing frameworks which foster possible developments towards sustainability (2) Top-down and bottom-up approaches (3) Approaches for external assessment, peer assessment, and self-assessment.

The homepage of FORUM Umweltbildung on SUs focuses on actual activities which universities could carry out if they want to implement sustainability. It works with a bottom-up approach, presenting tools for putting

sustainability projects into practice. In this sense it offers a soft form of self-assessment.

The Austrian Sustainability award also focuses on actual activities of the universities. However, it is the only example of the four which has a top-down approach, being funded by two ministries which commission a jury to decide on the winners in each of the eight pre-defined categories. Thus, the Award works as external assessment.

Both SAQ and AISHE work as self-assessment tools and thus focus on what has actually been done as well as on conditions which foster developments towards sustainability.

SAQ and AISHE are bottom-up approaches but whereas SAQ starts out with putting definitions of ESD concerning universities at the disposal of the university stakeholders, AISHE works with a pre-defined definition of ESD just as the Sustainability Award does. Both tools can function as means for self-assessment and as forms of peer-assessment if universities go through the certification process. The four presented initiatives show how different the paths towards ESD in the university sector are. In different countries and different academic and societal contexts, universities can choose from a number of initiatives the ones best suited for their own development.



"Coffee to go" method during the Workshop of Dr. Regina Steiner.

## THE BALTIC UNIVERSITY PROGRAMME (BUP): COOPERATION ON SUSTAINABLE DEVELOPMENT IN HIGHER EDUCATION IN THE BALTIC SEA REGION

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**Key words:** Regional cooperation, network, sustainable regional development, interdisciplinarity, internationalism

The BUP is a network of universities that operates within the drainage basin of the Baltic Sea including 14 countries completely or partially within the basin. They are the Nordic and Baltic States, Russia, Poland, Germany, as well as the major inland states of Belarus, Ukraine and the Czech and Slovak republics. All countries have one national centre except for Russia with centres in St. Petersburg and Kaliningrad and Germany with centres in Hamburg and Zittau. The 15 centres distribute information on courses and develop Programme activities within their countries. The region has 85 million inhabitants constituting 11% of the population of Europe.

BUP was initiated by Uppsala University in 1991. Sustainable development (SD) addressing environmental, economic and social issues has become a widespread goal during the changes in the Baltic Sea Region. Today, the BUP has developed into one of the largest university networks in the world. Several kinds of universities are active within the network: classical, technical, agricultural and pedagogical. The participating universities cooperate in areas of common interest for the whole region – helping to achieve sustainable regional development. Universities, where new generations receive their education, have a key role in the changes towards a democratic, peaceful and SD of the region. This builds on a long tradition of internationalism within the academic world. It is extremely important for the youth of today that they are offered education of good quality and are taught the values of life to prepare them for their future and for the future of our region. Today universities also address the general public, and cooperate with authorities and companies when specialist competence is needed. These roles of the universities are needed even more after the dramatic political and societal changes that have taken place in our region.

BUP produces curricula and teaching materials. All of the courses have an element of regional studies and are interdisciplinary and problem oriented. The undergraduate courses are:

Environmental Science; the Baltic Sea Region (area studies) and; SD of the Baltic Sea Region. The Master Courses are: Sustainable Water Management; Environmental Management; Sustainable Community Development. Soon there will also be the Ecosystem Health and Sustainable Agriculture Course at the master's course level. There is also a teacher training course on Education for Sustainable Development (ESD) called "Education for Change" that was developed together with the World Wildlife Fund.

The BUP network intends to be useful to several sectors of society. The activities and study materials have been used in many of the countries as a resource to devel-

op national strategies of SD. The network has also been a resource in the development of cities as well as regarding environmental management and sustainable agriculture. Cooperation with other actors in society in applied projects is an important part of studying and developing sustainability strategies.

BUP has been involved in the education sector of Baltic 21 since the start in 2000 and represents HE. It is member of the now Expert Group on SD- Baltic 21 (previously Baltic 21 Senior Officials Group) and have been actively involved in Baltic 21's work in many ways over the years and have a long history of active cooperation within the Baltic 21 network and process. The Baltic 21 Lighthouse Project EHSA (Ecosystem Health and Sustainable Agriculture) is led by the BUP and is a project with concrete outcomes, such as seminars, training sessions and with elaboration of valuable knowledge-based educational materials for master-level students at universities in the whole Baltic Sea Region as well as the Great Lakes Region in the USA and Canada. This project is also awarded the status of a UN Partnership for SD and was as such presented at a partnership fair and side-event together with Baltic 21 at the UN Commission for Sustainable Development (CSD) 16 Meeting in New York in May 2008. In the EcoRegion Lighthouse Project, the BUP disseminates experiences from the EcoRegion project via numerous conferences, seminars and meetings. The BUP also participated in the Baltic 21 Lighthouse Project SUSTAINMENT which focused on sustainability development in municipalities under the lead of the Union of the Baltic Cities (UBC). The BUP is since 2009 strategic partner to the Council of the Baltic Sea States CBSS in the area of HE.

The BUP is an active actor within the Decade of ESD and has held so far ten Teachers Training Conferences on ESD that have been offered to university teachers in the region. Several of them were organised together with Åbo Akademi University in Finland. This presentation was held at the tenth one in connection with the "Residential Training Workshop on Universities & ESD" that was organised together with University of Athens MIO/ECSDE in Amfissa, Greece during the 24-28<sup>th</sup> May 2010. The BUP has an internet portal on ESD together with Åbo Akademi University and is a member of the Swedish UNESCO ESD Commission. The BUP and the Finnish Centre were invited to the UNESCO World Conference on ESD- Moving into the Second Half of the UN Decade that was held in April 2009 in Bonn, Germany. Many of our teacher and student activities are held with assistance from the Polish Centre at Lodz Technical University.

For the second time, the BUP organised and held a BUP Rectors conference on 14-16 October 2009. Approxi-





Ms Christine Jacobsson, Director of the Baltic University Programme (BUP).

mately 60 Rectors/Vice-Chancellors and 120 participants from 74 universities within the Baltic Sea Region travelled to Uppsala University to participate in our Rectors' Conference. The main themes of the conference were the BUP's activities and cooperation, the EU Strategy for the Baltic Sea Region and the UN DESD. At the conference fifty universities signed a Declaration of Cooperation. The conference was closed by Rector Anders Hallberg, Uppsala University, who invited his colleagues back in 2011 to the next Rectors Conference which will also celebrate BUP's 20 year anniversary.

The BUP is involved in the EU Strategy for the Baltic Sea Region. Actually it is lead partner together with Lithuania (Ministry of Foreign Affairs and Vilnius University) for a flagship project included in the action plan. The focus of the flagship project is to coordinate the cooperation on SD between universities in the Baltic Sea Region. The flagship project is in the fast track and work to attain financing for this endeavour has started as an application for the 3<sup>rd</sup> call of the Baltic Sea Region Programme 2007-2013 was submitted in March 2010. Financing can be quite difficult as, so far, no suitable financing mechanisms are in place. BUP is prepared to take the lead if the necessary financial resources are made available. We strongly support the implementation of SD within the Baltic Sea Region. There are in all four projects on education within the Strategy and they were initiated at a Kick-Off Meeting on February 2010 in Hamburg and will be further discussed in connection with the 2<sup>nd</sup> meeting in Brussels on June 2010. Securing financing for the

implementation of the flagship projects of the strategy will be a challenging task for the European Commission and its partners and considerable work must be done to achieve this. In the long run the success of the Baltic Sea Strategy will be dependent on availability of financing for the projects. At the same time other regions such as the Danube have started to create their own regional EU strategies, so it is important that the EU Strategy for the Baltic Sea Region is successful. The Strategy was also one of Sweden's top five priorities for their EU presidency during the last half of 2009.

As the main focus of the BUP is to produce and offer courses for studies on SD of the region and of its environment and its political changes as well as to offer student and teacher conferences, teacher training, Rectors conferences and other activities for the network, it is well suited to be the Lead Partner of the flagship project.

The BUP strives to give a significant input to regional cooperation in the Baltic Sea Region and also to cooperate with other regions such as with the Mediterranean region. Our cooperation started already in 2005 in connection with the Inauguration of the DESD that took place in Athens, Greece. The next step was a week long course on ESD that BUP held for both the BUP and MIO-ECSDE networks in October 2008 at Uppsala University, Uppsala, Sweden. In December 2008 BUP participated in the workshop to start the Mediterranean University Network on ESD and SD. We have great hopes for our future common endeavours and are prepared to contribute in any way that we can.



# TEACHER COMPETENCES FOR EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD)

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**Key words:** Competences, Education for Sustainable Development (ESD), Teacher Education

## Abstract

Education is one of the prerequisites of sustainable development (SD). The training of teachers is a vital prerequisite thereof. What competences do teachers need for ESD? On the basis of Quality Criteria for ESD schools compiled by the international network ENSI<sup>1</sup> 15 Teacher Training Institutions from 8 European countries in the course of the EU Project CSCT<sup>2</sup> developed a dynamic model of Teachers' ESD competences. This framework has been further developed within a research project commissioned by the Austrian Ministry of Education, Science and Culture (model KOM-BiNE). Both models are comprised of a diagram and an explanatory report. They represent an attempt to give some structure to the complexity of ESD. The models address the fields of action of teachers and instructors for ESD which not only concern the instructional setting itself, but also actions in the whole institution and the external relations of the institution. In these fields of action vital competences refer to the teacher's knowledge, values and feelings, as well as communicating, reflecting within their work, visioning, planning and organizing instructional settings and networking to achieve their goals together with others.

## The Notion of Competence

Although the term "competence" is being increasingly used on many different levels in general educational discussions, there is no single definition of it available, neither in scientific nor in everyday language.

For working out teacher competences for ESD we referred to the interpretation used by the OECD (on the basis of the project DeSeCo (Rychen & Salganik 2003), and especially of the work of Franz E. Weinert). According to Weinert, *"the theoretical construct of action competence com-*

*prehensively combines "... intellectual abilities, content-specific knowledge, cognitive skills, domain-specific strategies, routines and subroutines, motivational tendencies, volitional control systems, personal value orientations, and social behaviors into a complex system"* (Weinert 2001, p.51). Thus, what matters is not only the knowledge necessary for solving a complex problem. The development of competences requires the mobilisation of social and behavioral elements, like sentiments, value orientations, and motivations (Rychen, Salganik 2003). Furthermore, recent findings in brain research have shown that thinking and feeling are inseparable (Gonczi 2003).

Competences may be considered both with a view to the goals to be reached by means of them and with a view to their internal structure. In the first case the focus is on results, while in the second it is on the qualities required of a person who is to develop such competences. An example: The internal structure of the ability to cooperate would comprise knowledge, cognitive abilities, practical skills, attitudes, sentiments, values held, and motives (Rychen, Salganik 2003). According to Witt and Lehmann (2001) the internal structure shows what a competence consists of and can tell something about development, learning and teaching of competences.

Individuals do not act in a social vacuum. A competence does not exist independently from action and social context, but is defined with a view to practical requirements and is proved in actions (Rychen, Salganik 2003). This is due to the interrelation between individual and society. Therefore it is crucial that teachers get the chance to develop their abilities and skills in a real-world social context.

In addition, Weinert (2001) points out that over the last decades team (and/or group) competences have also been increasingly referred to, in other words: the interaction of individual competences that enables a group to solve a problem. ESD is one of the areas where cooperation and joint efforts are essential for problem solving.

## The CSCT model of ESD Competences<sup>3</sup>

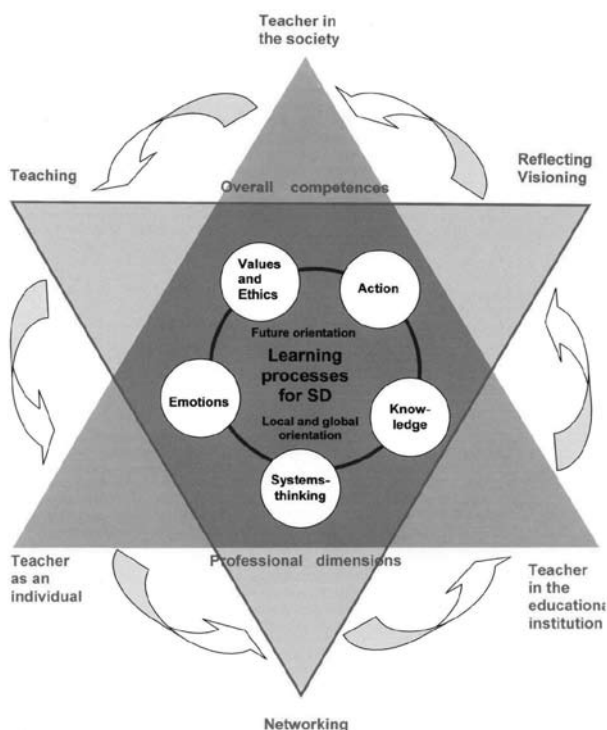
We have to envisage teachers as individuals who are in a dynamic relationship with their students, their colleagues and the wider society (blue triangle). It is within this dynamic relationship that we create the conditions that enable genuine learning to develop and progress in ESD. This means that teachers are no longer simply the communicators of knowledge, but members of an in-

1. ENSI ([www.ensi.org](http://www.ensi.org)) is an international government-based network that places emphasis on school development in the field of ESD. Its strengths lie in the combined work of policy makers, researchers, educators, their students as well as pilot schools. Working in this context, ENSI prepares case studies on teacher education, carries out research by conducting cross-analysis studies and develops trends and guidelines for future oriented teacher education. ENSI also organises case studies on school development in the field of ESD and develops guidelines and a set of quality criteria by cross analyzing these studies. The network influences policy decisions at the international level. It supports schools by helping them in their own development and promotes international exchange by influencing networks across Europe and beyond. ENSI organizes and affects the exchange of expertise in the field of research on ESD.

2. CSCT: Curriculum, Sustainable Development, Competences, Teacher Training, see [www.ensi.org/Projects/Teacher\\_Education/CSCT](http://www.ensi.org/Projects/Teacher_Education/CSCT)

3. See [www.umweltbildung.at/CSCT](http://www.umweltbildung.at/CSCT)

### Dynamic model for ESD competences in teacher education



stitution, which has a collective focus on the way all its members learn and develop, and all of those people are involved in the dynamics of a society that is seeking to confront the issues of sustainability.

For all these levels teachers need specific competences, which are explained with the five domains. In addition to these, overall competences are needed.

Three overall competencies are identified (red triangle):

*Teaching and communicating* – Learning is understood as a self-steered and an active process, which can be fostered but not created, according to the concept of constructivism.

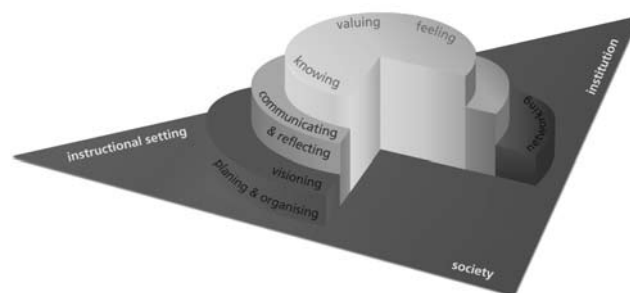
*Visioning* and creating new perspectives are important tasks because the transformative role of education is a key issue in ESD. Action will change as a product of *reflecting* and *visioning*. An effective tool to foster reflection and visioning in order to improve teacher competences is Action Research.

*Networking* with partners in and out of school is necessary in order to create a learning environment of real life problems and issues in society. For this overall competency also communication, conflict solving and team competences are necessary as well as planning and organizing skills.

The domains in which ESD teachers need specific competences are identified as “Knowledge”, “Systems thinking”, “Emotions”, “Ethics and Values” and “Action”. To exemplify, I want to explicate the domain “Ethics and Values”: Norms, values, attitudes, beliefs and assumptions guide our perception, our thinking, our decisions and actions, they also influence our feelings. Equity (social, intergenerational, gender, communities, etc.)

is considered as the main guiding principle of ESD. The competences for a *Teacher as an individual* are among others: Clarify beliefs and assumptions and encourage students to question their assumptions and beliefs. Those of the *Teacher as a member of an educational institution* are to not impose values and opinions, allowing students to hold their own positions and focus on students’ clarification and discussion of their values. The competences of a *Teacher as a member of society* are identified as being aware that values are developed through an ongoing and context-sensitive process and focusing on understanding the concept of European citizenship, including rights and responsibilities it confers. Each domain is explained in a similar way and illustrated by a non-exhaustive list of sub-competences.

### The model “Competences for ESD-KOM-BiNE”



In the core of the model is a team of teachers or educators for ESD. As explained before especially in a field like ESD it is not possible for one single person to command all the competences required. Mutual support within the team and a network extending into the environment are of special importance here. Only by the interaction of different persons and their joint utilisation of individual fortes and abilities can the requirements for ESD be met in the best possible way. Like in the CSCT model the basis is the assumption that ESD teachers (in formal and informal education) put their competences to use in three different areas, the (1) instructional setting (lessons, seminars, courses), (2) the institution (school, University, NGO), and (3) society (local and regional environment, both near and far).

The inner cylinder contains highly personal elements, subdivided in three parts: *knowing* as knowledge of facts or content on SD and ESD and knowledge of methods (domain-specific knowledge with respect to ESD), then *valuing* (clarification of and dealing with values), and *feeling* (being aware of and dealing with emotions). All three are closely interconnected.

Two activities that are important for “good teaching” in general, but especially so for imparting ESD, is *reflecting* and *communicating*. Reflection is essential in order to critically examine and deal with one’s own knowledge, abilities, values, and sentiments. Reflection is also important with respect to the chosen activities and therefore is related to both the inner and the outer levels. For

ESD it is not only important to communicate regarding common action and organize learning environments (the outer layer of the diagram), but also to share knowledge, discuss values and communicate feelings.

In the outermost layer of the diagram and thus in the area closest to the social fields of action the activities *visioning*, *planning*, *organising*, and *networking* are located. These activities are considered to be closely related; therefore they are situated within one layer. Planning and organizing denote the development of visions and plans as well as the appropriate steps towards their realization. Each of the areas of the model is explained further in the report (Rauch et al. 2007, 2010).

### What is the purpose of the models?

The models intend to facilitate the restructuring of existing as well as the planning of new ESD programmes for teachers by helping to link all the different areas and fields of action. They can serve as tools for reflection while planning curricula for Teacher Education. Possible questions could be: *Does the course sufficiently support critical reflection on existing and newly acquired knowledge? Is there enough space in the course to deal with values and feelings aside from constructing knowledge? Do the participants of the course get the possibility to develop their own ideas and plan their own projects? Is communication and networking among participants of the course and with people and institutions outside possible? Etc.*

Both models are to be seen as “learning concepts” (Heinrich et al. 2006). This means that in the course of

putting any ESD program into action they will be constantly developed and new experiences will feed this process. In other words, the concepts themselves will turn into objects of reflection and development.

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From left to right: Dr. Regina Steiner, prof. Daniella Tilbury and prof. Michael Scoullas. All three of them focused in their presentations on the needed competences for Teachers of ESD.

# THEMATIC PILLAR I: CURRICULUM & PROGRAMMES OF A SUSTAINABLE UNIVERSITY

## ECOSYSTEM HEALTH & SUSTAINABLE AGRICULTURE

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**Key words:** sustainable agriculture, land use, rural development, ecosystem health, ecosystem management

The goal is to develop a new educational package and transfer knowledge on sustainable agriculture, land use, rural development, ecosystem health and management to teachers, student and professionals in the Baltic Sea Region (BSR) and in the Great Lakes Region (GLR in USA & Canada).

The Baltic Sea and the Great Lakes are affected by many different environmental problems from different sources. Discharge of nutrients and other pollution from agriculture and waste-water treatment plants, as well as discharge from industries, and waste facilities leads to eutrophication and other forms of pollution. It is important to increase the knowledge of and improve the management of land and land use to prevent pollution from agriculture and related activities in rural areas from reaching the Baltic Sea. It is also of great importance to use an ecosystem health concept to understand and prevent problems for the future.

The BUP Network and the Envirovet Baltic network are developing a comprehensive course for master's level university education in Ecosystem Health and Sustainable Agriculture, to be offered to higher learning institutions in the networks. Countries that participate in the project are Belarus, Canada, Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Kaliningrad and NW Russia, Slovakia, Sweden, Ukraine and the US.

This cooperation is unique, as it represents a cooperation scheme between agronomists, veterinarians, nature geographers, biologists, chemists, animal scientists, wildlife biologists, public health professionals, economists, business and policy experts etc. It also represents a new concept on sustainable agriculture and its part in the rural ecosystem. In this course package, not only will sustainable agriculture from the different aspects represented by the above mentioned professions be covered, there will also be substantial knowledge on such subjects as land use and rural development, climate change, ecosystem health and the interactions between the wild and domestic animal populations, as well as public health components and poverty alleviation.

The course package consists of three modules. The project has transferred knowledge through a series of seminars and training courses while developing a new educational package on sustainable agricul-

ture, land use, rural development, ecosystem health and management to teachers, students and people working in government offices, ministries, municipalities and as agricultural advisors and agricultural managers. The titles of the modules (and books) are:

- Rural Development and Land Use (ed: Ingrid Karlsson, BUP, Uppsala University) ~ 300 pp
- Sustainable Agriculture (ed: Christine Jakobsson, BUP, Uppsala University) ~ 460 pp
- Ecology and Animal Health (ed: Leif Norrgren, Swedish University of Agricultural Sciences) ~ 400 pp.

This educational material will be available to all universities in the Baltic Sea Region as well as in the Great Lakes Region. The English version of the books are planned to be finalized during 2010 and the Russian version in 2011. Both versions will be presented to the networks in connection with Teacher Training Conferences to launch the educational material and the courses.

The European part of the project is financed from grants through the Swedish International Development Cooperation Agency (Sida) /Urban and Sida/ Baltic Sea Unit, the Swedish Institute and the Ocean Environment fund (SEPA). It was a part of the Baltic Sea Regional Project (Helsinki Commission). The North American part is financed through the Center for Global Studies at the University of Illinois, the University of Illinois at Urbana-Champaign, and small grants and donations from private, state and federal sources. The EHSA project contributes to the implementation of the Baltic 21 (Agenda 21 for the Baltic Sea Region) Agricultural sector action programme, where education, training and information for farmers, future experts and advisors, policy makers and consumers figure as one of the most important actions. It is awarded the status of Baltic 21 Lighthouse Project in March 2007. Baltic 21 is the regional Agenda 21 for the Baltic Sea region initiated by the Prime Ministers of the countries in the Baltic Sea region. The project was also awarded the status of United Nations Partnership for SD in April 2008 and was presented at a partnership fair in connection with the 16<sup>th</sup> Meeting of the UN CSD in May 2008 in New York, US and a side-event at the same meeting.

Further information at [www.balticuniv.uu.se/EHSA](http://www.balticuniv.uu.se/EHSA)



# PEDAGOGICAL APPROACHES IN THE DEGREE PROGRAMME OF SUSTAINABLE DEVELOPMENT

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**Key words:** Sustainable Development (SD), Higher Education (HE), social media, e-learning

## Background

The Degree Programme of Sustainable Development (SD) is one of the study fields in the Faculty of Natural Resources and Environment in Hamk University of Applied Sciences in southern Finland. Other faculties in this multidisciplinary university are: Natural Sciences, Social Sciences, Business and Administration, Social Services, Health and Sport, Technology, Communication and Transport and Vocational Teacher Education. The number of students is approximately 6300 including both Bachelor and Master degree students, and the number of teaching staff is appr. 350 and other staff 390.

The Degree Programme of SD is a Bachelor level programme through which students graduate as environmental planners. The curriculum includes all four dimensions of SD (ecological, economic, social and cultural), although the focus is on ecological and economic dimensions. The students can study as full-time or as part-time students. In this article I introduce pedagogical methods and learning tools used in the Degree Programme of SD for part-time students.

## Pedagogical Approaches

Part-time students have in-class lessons twice per month. Therefore distant learning approaches have an important role in their studies. Many virtual platforms have been used to facilitate distant learning and, in addition, to promote active social communication between the in-class lessons. "Moodle" is the Hamk's official study e-platform, including all teaching material, such as powerpoint-presentations and the instructions of learning tasks. An open web-community "Ning" has been founded for the study group. The Ning platform is most of all a place for all kind of discussion where students and professors discuss about studies and SD issues. Furthermore, some of the study tasks are prepared in forum and blog sites in the Ning platform. A Blogger site is used as an information channel for the students and a Facebook group exists as well, while in future mobile applications are planned to be used more and more.

Alongside with social media and other virtual applications, "traditional" pedagogical tools are used as well, such as: lectures, field trips, group discussions during in-class lessons, learning tasks, exercises, etc. One important and helpful solution is that all lectures are recorded via Internet by Adobe Connect Pro Programme. That enables contribution also of those students who cannot take

part in in-class lessons. Recording of almost all lectures gives a possibility to follow-up with the lectures whenever it is suitable for the students. Combining in-class and virtual methods in a sensible way assures that learning processes consist of social communication and interaction, knowledge management and practical skills training.

Using different pedagogical approaches ensures that the general objectives of ESD can be promoted. According to the theory of ESD in the process of learning for sustainability the critical factors are, above all, systemic thinking, critical reflection, envisioning and future orientation, participation, cooperation and communication and adopting spatial approach (Tilbury & Cooke 2005; Rohweder & Virtanen 2008). These are parallel to the United Nations Decade of ESD that highlights that education needs to promote the learning for critical and holistic thinking, participating, value clarifications, problem solving and capacity building for sustainability (UNESCO, 2005).

## Experiences

So far the students have been very satisfied with the teaching and learning methods used in the Degree Programme of SD. According to their feedback, communication has been active, information about the studies is easy to find and most of all, by combining online and virtual teaching methods the students learn different techniques and can study when and where they like. For the teachers the implementation of new pedagogical tools means a need to reorientation – a teacher should be more and more a guide/facilitator of the learning processes. As a whole, the teachers as well as the students have been quite facilitated in their communication, learning together and, as most important, in the promotion of the process of SD in different ways.

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- [www.unesco.org/en/esd/decade-of-esd/](http://www.unesco.org/en/esd/decade-of-esd/)



# ENVIRONMENTAL EDUCATION AND ESD IN LATVIA'S POLICY AND UNIVERSITIES

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**Key words:** Environmental Education (EE), Education for Sustainable Development (ESD), Ecological Footprint

In Latvia a lot of research and many meetings have underlined the urgent need to improve Environmental Education, in particular at the university level. From the total number of students in Latvia, only about 1,5 % have the possibility to study environmental issues or SD study courses (except those who are engaged in environmental study programmes). As a result, a huge majority of graduate students do not have basic knowledge about environmental problems when they start their career and become involved in decision-making processes [1].

Lack of Environmental Education is a reason why the implementation of SD and solutions of environmental problems are not successful enough in Latvia. To develop a solution for this problem the Latvian National Environmental policy plan (2004-2008) stated the need “to achieve that all graduates of HE establishments should master skills of environmental protection and SD during their studies”.

The need to develop the environmental education system is confirmed in the Environmental Protection Law, which was approved in November 2006. In chapter “Environmental science and education” of this law it is stated that “in a mandatory part of all study programmes of universities and colleges an environmental protection course is included”.

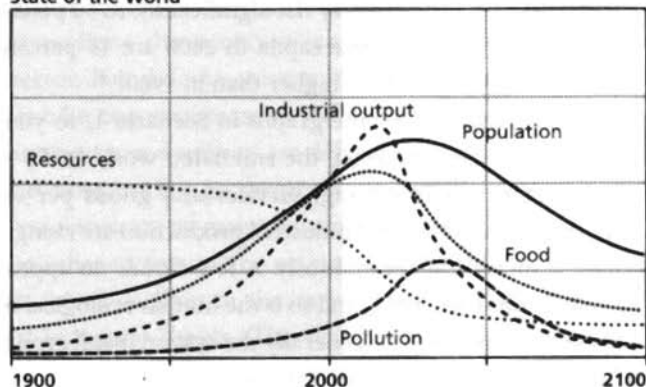
The mentioned above political documents helped Latvia to be supported by a Norwegian financial instrument from September 2008 to April 2011. The aim of the project “Development of environmental science study content and study materials” is to elaborate the contents of the study courses in environmental science for university level study programmes and study materials, including multimedia study materials.

The main activities are the following:

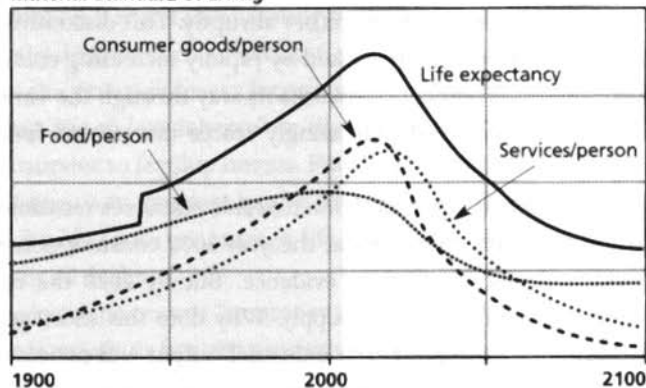
- Set up the project staff envisaged for the development of environmental education capacity in Latvia;
- Analysis of foreign experiences, discussion about national needs considering environmental study contents;
- Development of environmental study concept, contents of basic study course, development of teaching methodology, especially considering a need to develop multimedia approaches;
- Preparation and publishing of the appropriate study materials: textbooks (in Latvian and English),
- Presentation materials, tests for students and materials for teachers;

- Discussing the developed concept at international meetings on environmental education;
- Raising of public awareness through an information campaign including meetings, exhibitions, posters, advertisements, pamphlets, TV-shows and radio interviews,
- Close cooperation with the BUP, Uppsala University.

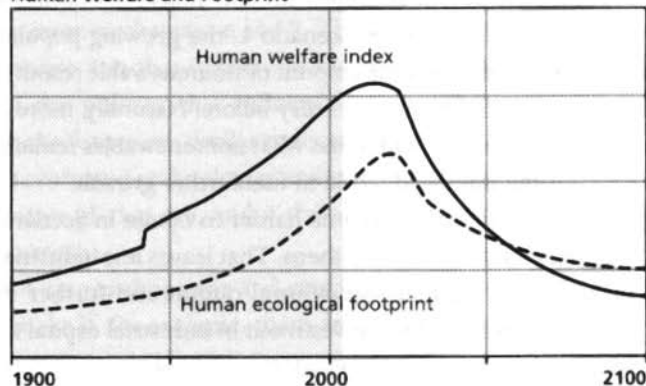
State of the World



Material Standard of Living



Human Welfare and Footprint



The Project is not innovative in the sense that it creates something which has not been done before or could not be done by anybody else. New, however, would be the combination of the various elements into a coherent environmental education system, which as such could be implemented within the educational institutions, the universities in Latvia for a start. If this would be successful, other levels of the education system might follow.

The main chapters of the new book, which will be translated into English and disseminated to the universities of the Baltic Sea region, are as follows:

- Preface (Messages by Connie Hedegaard, European Commissioner for Climate Action;  
Janez Potočnik, European Commissioner for the Environment;  
Andris Piebalgs, European Commissioner for Development;  
Christine Jakobsson, Director of the BUP);
- Introduction;
- Ecosystem's services, resources, man and environment; Environmental pollution, environment and health, natural disasters, economics;
- Environment & growth;
- Nature conservation, environmental technologies;
- Environmental management, sustainable development; Culture, ethics and legislation;

- Environmental communication;
- International cooperation in environmental protection and SD;
- Closing chapter - let's go!

I include in this abstract some figures from the book "Limits to Growth. The 30-year update" [2] and close with a quotation from an article by Denis Meadows for our new book "Environment and sustainable development".

*"In the early days, we had only models to tell us that we were expanding beyond the planet's carrying capacity. Now, we can look at the newspapers and get confirmation of the fact. It was astonishing to me in 1972 that people could believe that there are no limits. Initially, we assumed that people were just uninformed. If we could manage to give them the facts, they would change their opinion. Nothing I have seen in 40 years gives me support for that opinion. People who want growth will always find some reason to believe it is possible. There are an infinite number of rationalizations, so you will never manage to convince them".*

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2. Donella Meadows, Jorgen Randers, Dennis Meadows. Limits to Growth. The 30-year update. London, Sterling, VA, EARTHSCAN, 2004, 338 pp.



View of the plenary during the Case Studies Section of the training, in which all participants had the opportunity to present ESD examples from their institutions.

# ENVIRONMENTAL MANAGEMENT, POLICY & SUSTAINABILITY EDUCATION AT THE UNIVERSITY OF ZAGREB

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**Key words:** Postgraduate master study, Environmental Management, Sustainability

The Environmental Management, Policy and Sustainability (EMPS) study programme as an academic, postgraduate, master, interdisciplinary, international study has been developed as the main topic of the TEMPUS Project Master Programme on Environmental Management, Policy and Sustainability (JEP\_19075\_2004), which started in October 2005 and finished in November 2009. TEMPUS Project partners involved in the plan, programme and curriculum were: the University of Zagreb, Croatia, as coordinator, the University of Split, Croatia, the University of Debrecen, Hungary, as grant-holder, the University College of Dublin, Ireland and the National Technical University of Athens, Greece.

The main reason for setting the EMPS Study was the recognized needs for the education of skilled experts with an interdisciplinary approach on all environmental issues in Croatia and in the Region. The proposed EMPS Study Programme represents an appropriate solution at various levels of the HE system. The EMPS Study Programme is focused on three basic modules:

- Equalization and Common Understanding
- Environmental Management and Policy
- Environment – Development – Sustainability

The modules are based on the most urgent areas of professional employment such as: Environmental policy making by national and regional governments, Environmental divisions and projects in companies, governmental and non-governmental agencies, consultancies undertaking environmental impact assessment studies required for each new production plant or service, research organizations working on environmental management issues, monitoring and creation of new environmental standards, environmental education and training (long life learning).

Obligatory courses within the basic module Equalization and Common Understanding are the following:

- Environment, Environmental Management and SD (ECTS 9)

- Introduction to Environmental Science (ECTS 7)
- Business and Environmental Ethics (ECTS 7) and
- Environmental Engineering (ECTS 7).

Under the advanced module Environmental Management and Policy, obligatory courses are:

- Environmental Law and Policy in the EU and Croatia (ECTS 6)
- Environmental Economics (ECTS 6)
- Environmental Hazard and Risk Assessment (ECTS 6), and
- Public Policy and Participation (ECTS 6).

Within the frame of the practical oriented module Environment – Development – Sustainability, obligatory courses are:

- Sustainability under Development Programmes I and II (ECTS 10)
- Environmental Assessment Procedures (ECTS 5)
- Corporate Systems of Environmental Management and Audit (ECTS 5).

The EMPS Study consists of three semesters. In the second and third semester there are at least two optional courses. Each course is given by at least two lecturers, one from abroad and one from Croatia, as particular EMPS Programme characteristics assures cooperation among lecturers and experts from Croatia and Europe and provides the EMPS students with access to the professional and research results in the field of environmental management and sustainability through a proactive approach of the teaching process. The EMPS Programme is mainly taught at the Centre for Advanced Academic Studies (CAAS), University of Zagreb, in English, the official language of the EMPS Study.

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1. [www.unizg.hr](http://www.unizg.hr), 09.06.2010.
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## CHALLENGES OF SUSTAINABLE DEVELOPMENT – A NEW LIFE QUALITY

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**Key words:** education, students, university, Sustainable Development (SD)

The course “Challenges of Sustainable Development – A New Life Quality” took place on 15 – 18 June 2009 at the University of Technology and Life Sciences in Bydgoszcz, Poland. 30 students participated from three Polish universities: the University of Technology and Life Sciences in Bydgoszcz, the Technical University in Gdańsk and the Medical University in Wrocław. The students had various backgrounds: agriculture, architecture, environmental protection, environmental shaping, management, medicine, pharmacy and public health while the professors represented the three mentioned universities. Gathering so many different specialists ensured the interdisciplinary character of the course. The course was organized under the patronage and in cooperation with the BUP (Secretariat at Uppsala University).

The course consisted of workshops, seminars and group discussions during the four days. The active participation in the various sessions was a prerequisite. It was also required that during the course the students should participate in preparing a project called “Voyage 6000”. The project was a modified version of “The Mission” by Wolfgang Brunner (Brunner 1996).

The course covered the following topics:

- The BUP presentation
- The road towards sustainability – a historical perspective
- The principles of sustainable development (SD)
- The foundations of SD – ethics, law, culture and the physical boundaries
- Energy: from fossil fuels to sustainable energy resources
- Sustainable agriculture and rural areas development
- Consumerism: our free choice or a new form of slavery?
- The game theory in comprehension of SD implementation
- Cities of the future and SD conception -social origin in shaping ancient cities, cities of post-industrial era, consequence of population density in the 20<sup>th</sup> century, multicultural aspects of metropolitan cities (the example of Singapore and Kuala Lumpur)
- The quality of urban living areas

- Heuristic methods applied in SD shaping
- General classification of polluters in human living areas.

To be up to the interdisciplinary character of the course an effort was made to implement an innovative method of tutoring. In order to prepare the project, students had to choose the so called “specialists” from their groups to solve individual problems. The specialists were responsible for particular parts/issues of the project and to address them they had to attend selected lectures/classes.

After the course the students gained basic understanding on the concept of SD, barriers and possibilities for its implementation, how sustainability issues can be implemented in the modern society, what are the roles of the various stakeholders involved, from the individual to the global level, to promote SD. Upon the finalisation of the course the students completed an anonymous questionnaire which showed their overall satisfaction, especially the interdisciplinary methods of teaching and expressed their willingness to take part in a follow up course. Therefore, similar future international courses are planned covering more study fields (e.g. Law, Economy and Social Sciences) and countries. The relatively short course duration (4 days) caused some organizational and logistic problems. It was also difficult to stick to the timetable as the students sometimes needed more time to complete some tasks.

It is imperative to integrate different specialists in dealing with the various issues concerning SD. This emphasizes the importance of common courses for students representing different study fields and different countries. They can share knowledge, ideas and experiences and work together on the same or similar issues highlighting the various points of view.

For interested readers to join a working team of the course or send students, please feel free to contact us at: [piotr.prus@utp.edu.pl](mailto:piotr.prus@utp.edu.pl)

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# ENVIRONMENTAL AND SUSTAINABILITY STUDIES FOR ALL FACULTIES AT ÅBO AKADEMI UNIVERSITY

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**Key words:** multidisciplinary, transdisciplinary, sustainability

## From Environmental Education (EE)...

In answer to a need for a broad knowledge in environmental issues a multidisciplinary study subject “Environmental Studies” was launched in 1991 at Åbo Akademi University as an initiative of the Students’ Union. The main idea was to offer to students environmental studies in other subjects than their main subject which they had studied some years. Environmental Studies is accepted as a subsidiary subject (25-60 ECTS) in most study programmes at Åbo Akademi University. Since the beginning, courses from five faculties were included in the subject of Environmental Studies: Faculty of Mathematics and Natural Sciences, Faculty of Chemical Engineering, Faculty of Economics and Social Sciences, Faculty of Arts and Faculty of Theology.

The courses consist of ordinary courses given at the departments and of special courses tailored for this subject. Due to support from the university it was possible to develop new courses; the amount of the offered courses per academic year is at present about 25 from subjects such as Biology, Geology, Economics, Political Science, Public Administration, Sociology, Public Law, Nordic Ethnology, History, Philosophy and Theological Ethics. Many courses the focus on the environmental issues of their own discipline; whereas some are more transdisciplinary in character, such as the courses which belong to the BUP ([www.bup.fi](http://www.bup.fi)). About 130 ECTS are offered per academic year, mostly taught in Swedish, some courses in English (about 40 ECTS). Some courses are arranged at the Open University at Åbo Akademi, which enables also other persons than students enrolled for the ordinary studies to participate in these courses. With this course package the students will gain insight on SD.

## ... towards Education for Sustainable Development (ESD)

The students can choose courses from the offered course pool according to some rules: at least five ECTS have to

be chosen from all three areas, and namely, (1) Natural Sciences and Technology & Faculty of Technology (2) Social Sciences and (3) Arts, Education and Theology. In addition there is a compulsory Project (5 ECTS) about local environmental issues ([www.abo.fi](http://www.abo.fi)).

A variety of teaching and study methods are used: from the more traditional courses to web based courses. Lectures, group work, discussions, essays, presentations, written exams and/or web based quizzes can be included in the courses. The Open University offers Environmental Studies (25 ECTS) that are totally web based; this enables studies which are flexible regarding time and place.

A coordination group consisting of representatives of academic staff at different levels and fields and representatives of students manage the planning of this study programme. The coordination, administration and information are done by the Centre for Lifelong Learning, which is an independent institution at the university.

Åbo Akademi University has a strong environmental profile in education and research concerning several fields. Environmental Studies as a subsidiary subject supports student’s knowledge and understanding of environmental, social, economic and cultural perspectives. It is still challenging to work towards more transdisciplinarity. At present students are free to choose this subject among other free subsidiary subjects depending on their study programme. With the Bologna process the freedom to choose has not increased in general, rather the opposite. The students participating in this course package have got a picture of SD and taken learning to their future tasks. The students have appreciated especially the opportunity to take part in education related to other disciplines and with students from other fields.

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<http://www.abo.fi> Åbo Akademi University



## THEMATIC PILLAR II: GOVERNANCE, PROCESSES & CULTURE OF A SUSTAINABLE UNIVERSITY

### PROMOTING SD & ESD IN NOVIA UNIVERSITY OF APPLIED SCIENCES WITH AN INTEGRATED MANAGEMENT SYSTEM OF QUALITY, ENVIRONMENT & SAFETY

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**Key words:** Integrated management system, IMS, Sustainable Development (SD), Education for Sustainable Development (ESD)

#### Novia University of Applied Sciences

A result of the merger in 2008 between Svenska yrkeshögskolan University of Applied Sciences, certified according to ISO 9001 since 1999 and Sydväst University of Applied Sciences, certified according to ISO 14001 since 2006 was that it was obvious to merge the management systems into one.

Novia is the largest Swedish-speaking University of Applied Sciences in Finland. We have about 3500 students and about 390 employees. There are 34 degree programmes leading to a Bachelor's Degree and 3 leading to a kMaster's Degree. Four programmes run entirely in English. We have degree programmes from all possible fields which is a challenge but also a resource for implementing all aspects of SD.

#### How?

Novia stands for: quality education, regional presence and SD – ecological, economic, social and cultural. We apply an integrated Management system of Quality, Environment and Safety, which will be certified to ISO 9001 and ISO 14001 at every unit in September 2010.

The documentation follows the structure of the quality management standard ISO 9001 wherein we have implemented the demands from the environmental management system, EMS standard ISO 14001 and the safety management system standard OHSAS 18001. The policy, implementation and operation, checking and management review includes the demands for quality as well as environment and safety. Special demands from the EMS are planning: environmental aspects, significant aspects, sustainability objectives and programmes. For the legal and other requirements we also have to know how these apply to our environmental aspects and evaluate them for compliance, for example: waste disposal.

#### Why?

The most important goal is to support our students' progress into quality and environmentally conscious skilled citizens who can take sustainability into consideration in their future roles. Integration of SD in the knowledge in education and research & development is the main difference between an environmental management system at a university and a company. The positive impact is huge, all students that graduate.

To increase the environmental consciousness of our students and personnel it is also important to consider the environmental impacts of our service functions.

Practice what you preach is important for credibility in an educational institution.

#### Problems or Challenges and Solutions to them

The main challenges during the last years have been to choose indicators and to use as many as possible. For measuring ESD we have asked every Head of the degree programmes to answer which relevant aspects of SD for the profession they have in the curricula and how it is taken into account. We also have an issue about how well SD is integrated within our university in internal surveys to students and personnel.

Continuing education for the personnel is applied, during which the entire personnel are involved in choosing goals for their unit. All units have their own goals for promoting SD. The intranet of the university has a section with the SD tip of the week, which is written by the students and the personnel. The external auditor's positive reflections of how well SD is implemented, works as positive feedback to the personnel.

#### How Sustainable Development is linked to Course Work

The economic, social, environmental and cultural aspects of SD are linked to all course work. Det Norske Veritas, who audits our management system, considers this integration a strong asset. Some examples of how SD has been incorporated in the curriculum: study modules in sustainability worth 3 or 5 credit points is part of most degree programmes, SD is integrated in R&D, continuing education of the personnel, course description includes the heading "sustainability aspects" stating briefly how sustainability themes are dealt with in the course and during their practice placements students also observe their work environment from the sustainability point of view.

#### New Network Project

Developing integrated management systems, especially for promoting SD and ESD within universities, in cooperation with companies and associations that promotes EMS and integrated management systems. We are interested in universities that have had a management system certified for years and want to develop it further. Within some years we'll organize seminars on the priority themes of the participating universities, institutions of HE.

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<http://www.novia.fi/english/>

# A MORE SUSTAINABLE UNIVERSITY: WHAT CAN STILL BE ADDED ON?

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**Key words:** Criteria, Study forms, Distant education methods, Strategy building

## "More Sustainable University" definition

Since values and ethics serve as a major foundation of human behaviour (Dolgoft, Loewenberg & Harrington, 2005), they are particularly important for university communities. In the Danish SD Strategy it is stressed that SD is a shared responsibility and we must measure progress. "A more SU" in the author's opinion provides students with qualitative studies and knowledge, awakens their creativity, critical thinking, respects traditions and cultural values, preserves natural environment, saves material and energy resources and all these elements and services are available for everybody in society at a reasonable expense. The related expense has to cover the university and staff requirements for keeping up advanced research and qualification levels, which is a prerequisite for qualitative studies. The study programs of a "more SU" have to reflect society's needs and be more flexible than a "less SU" (Fig.1).

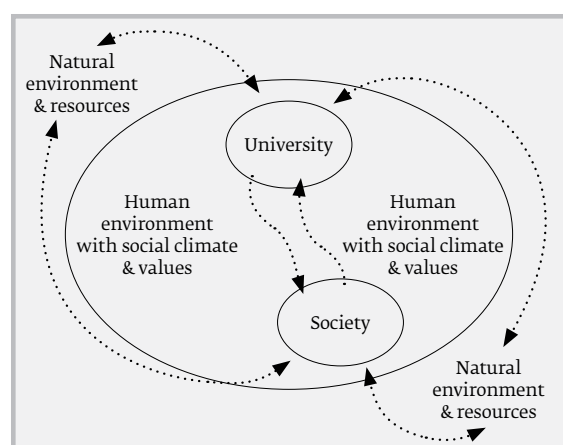


Fig. 1. The relationship between University and Society.

## More and less sustainable examples at Klaipėda University

The rapidly developing Klaipėda University (KU), established in 1991, has around 10,000 students and 600 professors, docents, lecturers, studying and working in seven faculties, five scientific research institutes, etc. KU offers a developed three level study system: 67 bachelor, 4 specialized vocational, 48 master, 3 doctoral study, 16 degree and 12 non-degree programmes and courses for international students. The scientific research and academic activity fields, which are not developed in other Lithuanian universities, but remain dominant in Klaipėda University are: marine environment research and engineering of marine transport; marine archeology; human and social geography.

## Are there any signs of sustainability at KU nowadays?

One such sign might be the flexible study forms: students at KU can choose between ordinary/day studies and distant or evening studies. Another positive example, the ITC Distant education group established in 2009 after the reorganisation of the KU Computer Centre to the Centre of Information Technologies. In 2010 as compared with 2009, the number of courses using distant education methods increased on average by 4% and the number of lecturers by 19 % (Baziukaitė, 2009). However the number of students decreased by 6% in 2010. One more example is teachers' mobility. In 2008 several course study groups were organised outside KU, in other towns of Lithuania - in Kaunas, Marijampolė and Panevėžys - for the Childhood Education Study Programme. The reason why they were organised there was the high number of students in those towns. Teachers moved to the students and gave lectures, arranged seminars, etc. at their living place.

There are attempts to make distant practice (6 ECTS) for Social and Human Geographers of the third study year more sustainable. Usually this practice is fulfilled by the whole of the student group together with the supervisor in the neighbouring to Lithuania country, where KU Erasmus partners or a partner-university is located. During the last 10 years such practices were organised in Eastern and Northern Germany, Southern and Northern Poland, Estonia, Latvia and Ukraine. Despite their high cost, the outputs are highly valued by the students. One solution to make them cheaper, is to coordinate universities-partners and share expenses. Another option is to search for sponsorships in both the receiving and sending countries.

## Are there some less sustainable examples at KU nowadays?

They are few, that must be improved: many of the KU bachelor study programmes could be shortened from 4 to 3 or 3.5 years; and some master study programmes from 2 to 1.5 years; high tuition costs could be adapted to the decreased average income due to the recent economic crisis; the gaps between society's needs and KU's readiness to address them should be narrowed.

There is much work to be done at Klaipėda University in terms of developing its strategy towards being a more SU in many spheres - academic, social and environmental.

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## PROMOTING SUSTAINABILITY IN HIGHER EDUCATION: GOVERNANCE, PROCESSES & ORGANIZATIONAL CULTURE AT KYMENLAAKSO UNIVERSITY OF APPLIED SCIENCES

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**Key words:** Organizational culture, quality assurance, strategy, sustainability, education

In Finland many actions have already been taken to support Sustainable Development (SD) through education and to strengthen Education for Sustainable Development (ESD). The Bologna Declaration and the UN DESD have provided the guidelines for the promotion and implementation of ESD in Finnish HE. SD has been integrated into the curriculum of Finnish preliminary and secondary education since 2004.

Kymenlaakso University of Applied Sciences (KUAS) is a medium sized university with 4400 students and 250 teachers. There are three main faculties: Technology, Forestry and Transport, International Business and Culture, and Social and Health Care. The university is located in the south of Finland, 130 km to the east of Helsinki, the capital city.

KUAS started to include SD in all its functions (education, research and development, daily activities) in 2003 when the Environmental Management System (EMS) was launched. The EMS was based on the ISO 14001 standard and the Eco-Management and Audit Scheme (EMAS). Initially, the EMAS mainly consisted of the environmental impacts of KUAS. During the past five years, the advantages of integrating quality management and SD in education have become clear. However, the system itself does not ensure change in the organization. A change in the organizational culture is also needed. The change to see things differently starts with strategies, vision, and goals.

At KUAS, the managerial commitment is demonstrated in the updated organizational strategy which defines that our profile of expertise is based on socially, ecologically, and technologically sustainable and safe development according to the goals and objectives of KUAS. Sustainability is also one of the main components in our quality assurance system (EFQM + ISO 14001). The transition towards sustainable organizational culture and governance has proceeded step by step. The process is a continuing one.

The challenge is how to turn strategy into reality. We could follow the quality management protocol to simplify the task:

- a. Plan: Say what you do
- b. Do: Do what you say
- c. Check: Prove it
- d. Act: Improve it

This is known as the Deming's PDCA cycle.

We have established the SD Policy to explain to the general public what we intend to do. According to the Policy, we have modified the governance as well as pedagogical and daily action processes towards sustainability. Sustainability is built into the degree programmes (curriculum development). We are using sophisticated information and communication technologies both in teaching and administration (e-learning facilities, e-library, thin client workstations, video meetings, electronic communication and documentation, etc.). Daily actions include, for example, waste management (recycling); efforts to measure and reduce energy, water, and electricity consumption; and the use of "green energy" (wind energy, district heating). The important part of sustainable organization is the willingness and ability to take care of the physical and mental health and well-being of the students and staff. All the actions need to be measured to prove the progress made and to set new targets for continuous improvement.

Kymenlaakso University of Applied Sciences describes the achievements by internal and external communication. We publish an annual Responsibility Report which can be read on the internet (in English) on our website: [www.kyamk.fi/responsibilityreport](http://www.kyamk.fi/responsibilityreport).

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## NETWORKING ON EDUCATION, SCIENCE & TECHNOLOGY FOR SUSTAINABLE DEVELOPMENT IN THE BLACK SEA REGION

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**Key words:** Black Sea Universities Network, Education, Sustainable Development (SD)

The Black Sea Universities Network (BSUN) was established in 1998, in Constantza, during the 2<sup>nd</sup> Conference of Rectors from the Black Sea Region, following the recommendations of the PABSEC Committee on Cultural, Education and Social Affairs from the session held in Bucharest in August 1997. Nowadays, the network consists of 117 universities of 12 member countries of the Economic Cooperation from the Black Sea Region (BSEC) - Albania, Armenia, Azerbaijan, Bulgaria, Georgia, Greece, Moldova, Romania, Russian Federation, Serbia, Turkey and Ukraine. According to the BSUN Statute, the Decision Body of the Network is represented by the General Assembly - Conference of Rectors from the Black Sea Region including the rectors of the member Universities. In the period between the sessions of the Conference of Rectors, the BSUN is coordinated by the Presidential Troika, together with the Executive Board, which consists of a board of representative rectors from each member country. The President in office is elected for a 2 year mandate and assures the implementation of the framework-program established by the General Assembly.

The BSUN activity is monitored by the International Permanent Secretariat of the network. The IPS-BSUN is hosted by the "Ovidius" University of Constantza, and at the same time, acts as BSUN Romanian National Secretariat (BSUN - RNS). In order to achieve its objectives, IPS cooperates with the National Secretariats. The BSUN - RNS has been established based on a decision of the Romanian Government as a public institution that receives subsidies from the State Budget. The institution is fully autonomous being subordinate from a decisional point of view to the BSUN General Assembly and BSUN President. The Romanian Government acts as a stakeholder and a warrantor of the accountability of the Secretariat.

Starting with its establishment, BSUN represented an Academic cooperation structure promoting the mobility of students and academic staff, the organization of scientific meetings, summer schools and workshops in different fields. In order to concentrate its efforts, the BSUN activity was structured on framework programs with duration of 2 years which were proposed and implemented by each Presidency. In this regard, up to now the following framework programs were developed:

- SD in the Black Sea Region - Romanian Presidency (1998-2000);
- The Partnership between the universities and the communities - Turkish Presidency (2000-2002);
- Excellence in Education - Azerbaijan Presidency (2002-2004);
- Science and ESD in the Black Sea Region- Moldavian Presidency (2004 - 2006);

- Generating Synergies - Bulgarian Presidency (2006-2008);
- SD - Ukrainian Presidency (2008-2010).

All activities developed under these programs can be found on the BSUN web-site - [www.bsun.org](http://www.bsun.org).

During the Congress of Rectors from the Black Sea Region held in Kiev between April 2 and 4 2008, the participants discussed and signed the Declaration of Rectors on SD in the Black Sea Area. The Declaration defines the principles for active involvement of the universities in the promotion of SD in the Black Sea Region. Between April 23-24 2010, the Congress of Rectors from the Black Sea Region was organized in Moscow. The BSUN priority areas for the next period have been approved as follows:

- Sustainable Development
- Networking on Innovation and Knowledge Transfer
- Energy Security & Renewable Energy Sources
- Advanced & Multifunctional Materials
- IT&C - Networking & High Performance Computing
- E-health & Telemedicine
- Social & Cultural Cohesion in the BSR

Furthermore, during the Congress the 2010 - 2012 BSUN priority projects were also set as follows:

- Virtual Centre on Interoperability of University Digital Platforms;
- Digital Archive for Cultural Heritage of the BS & CS Region, having the aim to preserve and promote the cultural heritage of the Black Sea & Caspian Sea region;
- Interdisciplinary Research Center on Social Cohesion, having as main goal the development of a competence unit for addressing the social problems in the different areas of our region using a multi-disciplinary approach;
- Master Degree Program on RES, for the development of a regional program on the management of RES;
- PhD Program on SD, with the aim of developing a regional PhD Program on SD.

An ongoing concern of BSUN is to strengthen cooperation with other regional structures for cooperation between universities, in order to evaluate the possibilities to develop joint projects, transfer of best practices and generate synergies. The cooperation partners of BSUN so far are: Eurasian Association of Universities, Association of Universities from the Caspian Regions, European University Association, and different other Consortia developing projects in selected sectors.



## HOW IS SUSTAINABLE DEVELOPMENT UNDERSTOOD IN THE SLOVENE HIGHER EDUCATION SECTOR?

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**Key words:** Sustainable Development (SD), Higher Education (HE), Education for Sustainable Development (ESD)

Within the project *Ethics in Education for Sustainable Development*, performed by the Science and Research Centre of Koper, a survey was carried out in Slovenian universities on the perception of SD. The project was carried out in the period from March to July 2009 and its aim was to see if there is an opportunity for a paradigm shift in HE and learning areas related to SD. The survey should show the presence of sustainability in university curricula, its position in education and the degree of familiarity of students and teachers with it. Some questions referred to the possibility of sustainability becoming the 'grammar' for a paradigm shift of research, education and learning and everyday life at the university.

The survey has 35 questions, 22 of them directly related to SD. The research covered undergraduate students in their final year, university researchers and lecturers from 26 Slovene HEIs. The respondents were 697 and lecturers and researchers represented 15 %. The results of the survey showed that neither SD is a well known concept within the Slovene HE sector nor is the UNESCO initiative Decade for ESD. However, the largest number of respondents believed that developing a feeling for social responsibility in HE is important (54,5%) as is ESD (58,2 %). Other interesting results relate to the question of how important ESD is for achieving needed professional com-

petences and if respondents would like to work in the field of SD in the future. To the former question 58,4 % of respondents answered that ESD is important and 66,6 % of them would like to work in the field of SD in the future. On the other hand 25,3 % of respondents were of the opinion that the Bologna process does not promote SD. These figures confirm that SD and ESD are difficult and complex issues that are not yet fully accepted in the HE sector even if there are extensive discussions.

HE, which we used to believe as a pillar for individual and social development, was identified as one of the causes of a huge impact on the natural environment that deserves to be reviewed. We believe the inclusion of sustainability factors in education and learning is not only a cultural or political need of modern society but is also a pure human need to preserve nature and in the end, itself.

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Views of the speakers during the Case Studies Section, in which all participants had the opportunity to present ESD examples from their institutions.

## THEMATIC PILLAR III: INFRASTRUCTURES OF A SUSTAINABLE UNIVERSITY

### CO-OPERATION OF SCIENCE AND EDUCATION AS A BACKGROUND FOR ESD IN UNIVERSITIES

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**Key words:** Science, research institute, education, Scientific-Educational Center

Activities of the Northern Water Problems Institute (NWPI) in the field of Environmental Education started in the early 1990s. The Scientific Educational Centre (SEC) "Water resources of Karelia and methods of their investigation" was organized in NWPI in 2002 on the basis of previous Environmental Education activities of the Institute using the teaching experience of its researchers and close co-operation with universities in Russia (Moscow and Saint-Petersburg) and, particularly, in Karelia within the Russian Academy of Science program "Support to young scientists".

The main idea of the center's activity is to prepare a highly qualified professional staff for scientific research institutions. This is however a complicated process which affects not only HE institutions but also secondary schools and society at large. The specific unique feature of NWPI SEC is the continuity of the study process: school pupil - university student - postgraduate student - young scientist, with school teachers involved in the process as the basis for high-quality Environmental Education in schools. This closed circle of the study process gives the opportunity to monitor the results and coordinate the process to correspond to variations in the educational system and the development of NWPI research activities. Moreover, it contributes to the formation of a new generation with an environment-friendly lifestyle, striving for SD in society, what can be rated as the possible background of ESD in Universities.

The main goals of the cooperation between science and education in Universities in connection to ESD in the High School system are: to create a strong circle of ESD: children/school-students/University-teachers/school-teachers/University-researchers/Science-member of society; to present the possibilities of science for ESD in Universities: researchers/students-results of scientific investigations-lectures/ publications/new updated study materials; to develop ESD by the links established between science and society, school/University; to prepare the scientific background for ESD in the University by pre-education of school students and school teachers and University students who are eventually the future school teachers.

The main types of NWPI SEC activities can be divided into two blocks: typical for University activity, such as theoretical lectures and practical experiments including field and laboratory work, and not-typical which belong to scientific work of the research institute. For example:

study expeditions on the research vessel "Ecolog", field expedition-camps, training courses in Finland, publications on Environmental Education (see the references), seminars and conferences for students, teachers and schoolchildren and wide possibilities of the international cooperation.

Our many years' experience showed that the cooperation between science and the high school system is very useful for both sides. NWPI SEC is a flexible facility connecting an Academy Research Institution and High Schools, involving additional partners including international ones. It provides favorable conditions for effective ESD. It gives plenty of opportunities for all partners, and by promoting Environmental Education benefits SD not only in a specific region, but more widely - at the national and international scope. NWPI SEC has a future-oriented character, being open to new ideas and challenges.

The results of our activity show that it is possible to suggest some ideas concerning ESD in Universities: various additional external inputs, also from Science, are very useful and effective; the pre-University level of students/teachers as a base for ESD have to be taken into account; the scale and intensity of international cooperation of the university greatly influences the ESD process.

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## SD AT THE NATIONAL UNIVERSITY OF KYIV-MOHYLA ACADEMY: COMBINATION OF HARD & SOFT COMPONENTS

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**Key words:** Green office, students' initiatives, Sustainable Development (SD) in practice

Two important steps have been implemented by the National University of "Kyiv-Mohyla academy" toward the SD: creating space – establishment of Green Office, and creating teachers-students NGO.

### Green office – learning through infrastructure improvement

Green office is a management philosophy which allows an organization to reduce negative impacts on environment through minimizing resources use, energy consumption and waste. As Universities have always played an important role in bringing fundamental changes to society, it is important that HE institutions declare environmental principles and implement environmental strategies. In 2007 the "Promoting green office concept among Ukrainian institutions" project was implemented at the National University of "Kyiv-Mohyla Academy" (NaUKMA) with the financial support from a British Council grant. The project aimed at incorporating basic principles of sustainable development into the NaUKMA strategy and green office concept into its day-to-day operation. The overall mission of the project is to promote environmentally friendly management philosophy among different Ukrainian institutions. As a result of the project and other initiatives at NaUKMA:

- The green office concept was incorporated into NaUKMA's Strategic Development Plan.
- Environmental certification is one of the criteria for all procurement tenders.
- A waste management system is implemented on campus and in the dormitories.
- Recommendations for the green office concept implementation into day-to-day operations are available on the web-page for all interested institutions.
- Research demonstrates the advantages of applying the green office concept in an organization due to optimizing its resource flows (water, energy, paper, etc.).
- Green office through publications in media, professional mailing lists, forums, seminars, and web-page serves as a training centre and source of expertise for private and public institutions.
- A seminar room in NaUKMA now serves as a model for illustrating the green office concept in action.
- NaUKMA serves as a pioneer and leader among Ukrainian educational institutions in the field of introducing sustainable practices.

- Students and faculty are aware of sustainability issues and ways to deal with them which is a contribution to the overall cultural progress of the University.

In 2007 the National University of Kyiv-Mohyla Academy's "Green office" won the 5<sup>th</sup> National Contest "Environmental quality and safety". The contest is organized by the Ukrainian National NGO "Live planet".

### EcoClub "New Wave" - Students & teachers NGO for a better environment

The establishment of the Green office created space for environmental initiatives and was an impulse for more teacher and student activities. In 2006 the EcoClub "New Wave", an environmental organization for students and alumni of NaUKMA was established. The goal of the organisation is to help preserving environment through educational and practical actions. EcoClub has become a platform for students to get the professional experience in the field of environmental protection; to establish a community of environmentally-minded students; to attract funding for joint research. Via EcoClub, under the supervision of professors students have implemented a number of projects such as: improvement of solid waste management on campus, the photo exhibition "Chernobyl Today: 20 Years After the Accident", installation of a parking-place for bicycles on campus, "Green Cinema" (educational movies about nature and the environment), trainings on environmental protection for students from other universities, establishment of artificial reefs at the Black Sea to support purification, etc.

As a result of student activities the webpage of the EcoClub is a recognized source of environmental information in Ukraine. EcoClub is the way for students to gain experience in environmental protection, in managing different activities and "green" PR. This is the challenge for students to try their strengths and make the world a bit better already today.

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## SUSTAINABLE UNIVERSITY INFRASTRUCTURE – NEW APPROACHES IN THE IMMANUEL KANT STATE UNIVERSITY OF RUSSIA (IKSUR)

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Over the past fifteen years Immanuel Kant State University of Russia (IKSUR) as the leading Educational, Research and Cultural Centre of the Kaliningrad region has been actively promoting SD. In the 1990s a number of legal acts indicating the necessity of continuous Environmental Education were adopted (Decree of the RF Government “On measures aimed at improvement of environmental education of the population”, 1994; Federal Law “On protection of the environment”, 2002). Taking into consideration the environmental component became obligatory in most of the faculties in state universities of the Russian Federation in the form of applied disciplines. In 1997 Kaliningrad Regional BUP Centre was established in the Kaliningrad State University (now IKSUR). BUP courses were embedded into the curricula of two faculties. The courses are coordinated by the Centre for the whole of the Kaliningrad region (six institutions).

The university has been an active partner in international research and educational projects, which resulted in developing and introducing study courses; setting up cooperation networks of educational institutions; establishing a Green Library within the university library; performing analysis of SD indicators in the Kaliningrad region; exploring potentials for wind energy use in the Russian Federation; developing and delivering online-courses for wind energy education in Russia. In addition, development of the Strategy of Energy Saving for the Kaliningrad region till 2020 was mobilised.

On November 23, 2009 the Federal Law № 261 “On energy saving and improving energy efficiency” was enacted. In accordance with the law all the municipalities and institutions are obliged to elaborate concepts of energy-saving. Following the new trends, IKSUR, with contribution from the Regional BUP Centre, established a Laboratory of Energy Efficiency and SD. Its tasks are: research, elaboration and implementation of complex measures aimed at rational use of energy sources, introduction of renewable energy sources and promotion of SD. The laboratory will be in charge of adapting the university policy in accordance with the principles of sustainability. A Programme of energy efficiency and environmental policy strategy will be developed; research projects aimed at search for and development of energy-saving and, in future, resource-saving technologies will be implemented. One of the planned measures is purchasing and installing equipment for monitoring energy losses. This will provide the laboratory with resources for implementation of its tasks and to support regional municipalities and institutions. The laboratory’s experts will conduct a

Feasibility Study Project for the new university buildings and upgrade them in accordance with the SD principles. Thus, the new buildings will be “wiser”. The new division as well as seven more laboratories will be placed in the University Technopark building, which is planned to be constructed as a mini-sustainable complex.

Currently one-third of the university budget is spent on paying for communal and housing services. At the same time a new attitude has developed toward the sustainable institution as in addition to being environmentally effective it is economically effective. The largest part of the university buildings are old structures, constructed without consideration of natural lighting, which results in high electricity expenditure. The first measure that requires relatively small investment is switching to energy-saving bulbs, and the process has already started.

In addition, some problems are connected to heating. Firstly, the heating system is not regulated, i.e. the heating is turned on and off centrally. This leads to discrepancies between weather conditions and indoor temperatures. The proposed solution is replacing the old radiators with regulated heaters. Another problem is heat losses, which occur mainly through windows. To keep a stable temperature additional equipment is turned on, which can lead to the system overload and shutdown of computers. Better heat insulation of the buildings and replacement of windows with insulating glass units are needed to improve the situation.

All these measures have already been taken for part of the university infrastructure. In addition to that, smaller examples of rational resource use can be given, such as reuse of paper and electronic internal document turnover. There have been some positive changes so far, though the university is at the beginning of the path, and there is still a lot of research and work to be done.

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## ENVIRONMENTALLY FRIENDLY UNIVERSITY: THE CASE OF AKDENIZ UNIVERSITY

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**Key words:** Ecological understanding, Sustainability, Sustainable campus, Critical thinking

The very first step towards being an environmentally friendly university was taken by Akdeniz University in 1991 with the establishment of the “Centre for Ecological Studies” (CES). The main target of CES is to play a decisive role in promoting environmental consciousness and ecological thinking across the country as well as within the campus. CES considers ecology as a way of thinking and behaving rather than as an independent discipline in studying environmental and ecological challenges at local, regional and international levels. Considering that nature functions independently of man-made definitions and values, CES emphasizes the importance of the critical interface between understanding and managing natural processes. This critical interface is taken as the major issue to be realized for a sound understanding of sustainability at large. In understanding natural processes an absolute avoidance of man-made definitions and values, such as good-bad, big-small, beneficial-harmful, etc. is necessary whereas in management practices these definitions and values are needed.

CES’s approach to the concepts of environment, ecology and sustainability is a critical one which, on the one side, accepts their vital importance at all levels and scales but on the other hand, perceives them as widely used economical and political elements as well. Economic and political aspects of these concepts bring in another dilemma of exaggeration through intensive media “bombardments” which consequently hinder the sustainable solutions of environmental, ecologic and sustainability issues. The philosophy of CES in relation to SD is to think and act trans-disciplinarily, holistically, critically, and locally without undermining the importance of larger scales which basically aim at behavioral changes rather than just building up awareness.

In 1993 the Presidency of Akdeniz University made a pioneering decision and the first medical waste incinerator of the country was put into operation on campus though it could operate only for few months.

In 1995 the “Environmentally Friendly University” project was launched by CES and Akdeniz University was identified as a “Pedestrian Friendly University” keeping cars off campus. To encourage walking, pedestrian trails have been designed and suggested. Now the cars are all around the campus but we have 200 free bicycles for the use of students.

In 1997 in order to promote environmentally friendly behaviors at different levels - national, local and campus level - an “Environmental Award” was launched through which the submitted works and projects are evaluated by a large jury and awarded every year on April 22nd, “Earth Day”. Thirteen projects were awarded in 2010.

In 1998, to bring students and university staff together, a meeting space with shops, cafes, restaurants, exhibition halls, student clubs, congress halls, banks, etc. was created. The centre helps to foster friendship among members of the university community.

In 1999, the landscaping of our campus started using local plant species, which currently is part of the curriculum.

CES has organized a series of Environmental Education courses on various topics such as Ecology for housewives, Hobby courses on Bonsai, Gardening, Ecology-based training in National Parks, and various ecology courses targeting specific groups such as: children, pupils, students, adults, tradesman, housewives, etc. These are some examples of what Akdeniz University is doing toward being a SU campus.

Changing behaviors is a life long process that forces us to be patient and focus on simple, easy to accomplish topics which integrate the importance of environmental issues.

# INTERDISCIPLINARY CASE STUDIES: ON MORE THAN ONE THEMATIC PILLARS

## SUSTAINABILITY & THE SAGESSE UNIVERSITY

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**Key words:** Economy, society, environment, Educational practices, Competences of Students, Professors' Competences, Variety in Educational Techniques, Respect of Cultural Diversity, ICTs & Distance Learning Input

The Sagesse University has for the last three years focused on the effective integration of a culture of SD as well as relevant courses within the core curriculum and the elective courses. We have integrated many courses that explain the concept of a more sustainable and solid economy. As for the Society pillar, it is present in every aspect in Sagesse University i.e. in Cultural Studies and Psychology. The campus is built in a way that facilitates students communication. Moreover, society is present in the culture of Sagesse University which combines a lot of backgrounds, norms and beliefs resulting in a sustainable culture. Regarding the Environmental pillar, Sagesse University is an environmentally friendly university where plantation activities always take place; nevertheless we encourage recycling which definitely helps the environment.

Here we come to the educational practices of Sagesse University which plays an important role in sustainability. Our official Syllabus and Curriculum are overviews and briefs of our courses and educational programmes. Yet, we have an integrated educational practice that Sagesse University emphasizes on, in order to create a culture of its own within the students and the staff. Its message is beyond just "teaching" students, its "educating" them, preparing them for the labor market and maintaining a good relationship with them through alumni networks.

As for the competences of students, Sagesse University gives its students who have a high potential the chance to develop themselves further. For example, it enrolls them in international competitions in foreign countries, in order to adopt critical attitudes, experiment, depend on themselves and represent their community. We also have inter-university sports competitions which develop cross-competences among the students. Nevertheless, we also tackle competences through the management approach that is present within our seven Faculties.

Just as we develop students' competences, we also develop a competitive spirit among professors. Professors are carefully selected after a thorough search of both academic and professional expertise. Faculties maintain a constant follow up on the professors' newly acquired diplomas, job positions, as well as publications.

Another factor that contributes to the university's sustainable character is the variety in its educational techniques. We include presentations and projects in the theoretical courses; other courses integrate field trips to bring the concept closer to the students; and, students participate in the annual job fair where each represents a company. As for the respect of cultural diversity, it is one of the main features of the Sagesse University where there is a blend of cultural, religious and social backgrounds, all of which are fully accepted and respected and students interact and cooperate in a very friendly atmosphere.

Moreover, to sustain SD in the university and since the world is moving more and more towards high-tech means including Information and Communication Technologies, Sagesse University is gradually integrating online education and ICTs. For instance, some courses have graded online assignments that students must implement. In other courses, materials are posted on websites which students can access.

Finally, Sagesse University is in the final process of implementing the ISO 9001-2008 Quality Management System, and then it will start with the ISO 14001 Environmental Management System within the first quarter of 2011 to move then to the ISO 22000 Food Management System and to conclude with ISO 26000 SD.

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## ESD IN THE CASE OF THE SLOVAK UNIVERSITY OF AGRICULTURE IN NITRA

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The Faculty of European Studies and Regional Development of the Slovak Agricultural University (SUA) in Nitra is the only faculty in Slovakia which has a Department of SD. The department was established 15 years ago and it is an essential structural element of the faculty. The study programmes of the faculty include strong principles of sustainability-environmental management, regional development, protection from economic disasters, etc. Education has focused on raising the environmental awareness of students who, as eventual members of management staff, will be expected to respect relations between the environment and economical development. The students are educated to make economically effective, socially fair and responsible decisions acceptable from the point of view of SD. At present a problem often faced is formalism in Environmental Education (EE) and Education for SD (ESD) and teachers are more focused on "lexical" knowledge than on awareness and action (c.f. Feher 2007).

The main purpose of education is the creation of knowledge and within this it is necessary to integrate natural sciences and arts. A relatively great problem arises from the fact that SD is a multidisciplinary system and the educational system in place is more or less monodisciplinary. The SUA is focused mainly on farmers who know environmental and economic principles of agricultural production and therefore many approaches of art subjects were quite new to them. Although it is declared that schools fulfil three basic functions: the transfer of knowledge, socialization and development of an individual, we know that transfer of knowledge dominates. At the change of traditional education to ESD a serious dilemma appears: on the one hand it is expected that the education will be democratic and allow the creation of one's own opinion, but on the other hand it forces the implementation of a specific SD strategy.

Education for a better environment can be oriented towards two connected directions: man's negative impact on ecosystems and man's behaviour. In the process of explaining the basic principles of education and structuring of the system of education for SD we have used a wide range of knowledge sources (e.g. the BUP, etc.). We apply an ecosystem approach in the explanation of environmental relations and the social and economic issues are linked to the structure and function of ecosystems and EE has changed towards ESD and teachers are considered facilitators in learning about SD.

Students approach the problems of the environment and SD in different ways, depending on the level of study and study orientation. Problems in ESD often originate from the fact that the attitudes of the teachers in the eastern part of Europe are often pessimistic (low wages, low social rank, surviving corrupt practices, etc.). In order to improve the work of teachers we have adopted Wright's

recommendations, according to which an educator-facilitator has to realise his/her imperfections, to decide for change, to identify functional methods, to experiment and test himself/herself and to identify resources for students and himself/herself.

One of the key questions is the methodology of ESD. Activation methods serve to support a students' activity and cover many methods known already from general and EE: motivation methods, creating methods, material activity methods (its base is formed by the exploitation of real objects or their display), methods motivating and stimulating activities, methods evoking and developing activities of critical thinking (problem solving, etc.). The rule is well-known: "Tell me and I will forget, show me and I will remember, let me do and I will understand". The individual activity of students is realised by means of their own work such as projects, research activities and studies. In the didactic practice different creative methods are applied. Case studies are typical methods of university education. They are used to investigate real phenomena and this makes them different from other methods. Research methods are also typical methods of university education and are more frequent at advanced levels. They are used for practical training and for the production of papers. They are also necessary for the preparation of diploma theses. Problem teaching is applied only when the students have sufficient professional knowledge and skills for creative thinking. The work itself is carried out in the form of small projects. Simulation or role games are typical for the lower levels of study, at the university level of education they are relatively rare. The experience obtained during simulation games enhances the decision making abilities of students. Effective communication belongs to the most important of all abilities at which the educational process is aimed. It connects didactically individual levels of the teaching process. Summer schools in field conditions are more practical in comparison with standard university lectures or seminars. The development of creative methods helps students to have an active approach in solving environmental problems when they become direct participants in the process of caring for the environment (e.g. Feher 2007; Bruce, Feher, Vavrova 2009).

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# EDUCATION FOR SUSTAINABLE DEVELOPMENT IN POLAND

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## Introduction

Formally, since 1997 Poland is oriented toward SD (Constitution, 1997 and many other documents). This does not automatically mean that there is a growing public awareness of the issue. In practice, there is lack of an integrated approach to issues concerning efficient development of the country (Kostrzewa, Piasecki, 2009). Of crucial importance is ESD. This paper is only a summary of a very large Polish system of information concerning ESD.

## Polish roots of ESD

Polish education for SD has a long and very interesting history. We have very interesting roots of scientific education spanning several centuries. The essential scientific input was provided by Nicolaus Copernicus (1473-1543) who laid the scientific foundations not only to Polish, but also to European education. The Polish forefathers of EE undoubtedly are J. K. Kluk (1739-1796) and S. Staszic (1755-1826). J. K. Kluk was a natural agronomist and entomologist. S. Staszic was educated at the University of Göttingen and Leipzig in Germany as well as at the Collège de France, Paris. Inspired by the French philosopher J. J. Rousseau, he created a very radical program of socio-economic reforms, including a program of national education. "First the nation, and then freedom, first life and then comfort" was his chief motto. The scientific output of these two Poles is of fundamental importance to the rational management of Poland's natural resources. This rational management was based on very broad original educational programmes in the whole system of Polish education - in Partitioned Poland (1795-1919) and in independent Poland from 1919-1939. The full list of Polish scientists who in the XIX and first half of XX centuries have the essentials of EE has around a hundred names. They are mostly naturalists, geographers, and technicians. Only Copernicus, Staszic and Pawlikowski were economists.

Knowledge based on the outputs of natural sciences and on practical initiatives concerning nature, the use and protection of nature was used firstly in programmes of education in primary schools. These programs were obligatory. Some elements were continued in high schools. Education for the protection of nature was implemented only in a few of Poland's universities.

## Education for the protection of nature (EPN) and Environmental Education (EE)

In the early 50s of the 20<sup>th</sup> century the trend changed. Polish research and education came under the total control of soviet dogmatism. Industrialization and urbanization in Poland after the 1950s focused first of all on the military interests of the USSR, resulting in the reorientation of Polish science and education to economic growth based on an intensive thievery and exploitation of natural resources. Polish examples of degradation, devastation, over-exploitation of resources (air, minerals, surface and ground waters, soils, wetlands, and forests, see the cases of the "Dead Triangle", "Puławy" and many others) became well-known world-wide. The only exception was Polish education concerning the protection of nature in primary education and in forestry.

From time to time activities within Education for Nature Protection were marginalized under the pressure for economic growth. Nature protection became a limiting factor in terms of GNP and GDP. Officially, nature protection was a socio-political goal, but in reality it was considered an obstacle to economic growth. Despite the official national agenda, Communist Poland had since 1949 a very modern "Nature Protection" act (Ustawa, 1949). Furthermore, many Polish National Parks, as well as Reserves (under strict and partial protection) were established over the years protecting the country's biodiversity; these were real achievements in the history of Polish education.

Poland accepted the outcomes of the Stockholm Conference back in 1972. Since then, many actions concerning environmental protection have appeared. Terms such as "environment" and "ecology" became very fashionable; the universal "panacea" for all socio-economic problems. Nevertheless, education was enriched with new issues. Currently, Poland has a very broad and diversified "front" of EE. In the majority of Polish schools, EE is applied at all levels. Hundreds of different research programmes, institutions, businesses, NGOs, are focused on EE. Since 1972, the Central Statistical Office (GUS) publishes very detailed data on the environment and on human interactions with the environment. With the exclusion of some universities, EE is applied in the framework of natural sciences and technology courses by naturalists and technicians (biologists, geographers, agricultures, foresters, waste engineers).

In the course of almost thirty years, EE in Poland has done a lot, is doing a lot, but very little for real SD and for ESD on the basis of the UN and UNESCO frameworks.



This requires changes in the lead 'elites' of decision-makers in public institutions and relevant organizations. Their perception, knowledge and willingness to change the socio-economic and environmental reality are of crucial importance.

### New trend towards ESD

In Poland the early activities for the protection of nature were the first steps toward a rational management of natural resources. "Protection" is a new economic concept – a subject for scientific research, economics, a tool and method for realizing the goals of "economic growth" and "development". It is similar to terms such as for example "production" and "distribution" (Kostka, 1973). "Protection" is not the opposite of "management", but part of it. "Protection" does not work against "development" but rather for it. In the mid 70s a new analysis and recommendations were formulated which were published 10 years later (Kostka 1985, Kostka, 1987).

In 1992 the "Foundation of Economists of Environment and Natural Resources" and the "Polish Society of Economists of Environment and Natural Resources" were launched. The work of these two NGOs up to now is worth mentioning, including the training of hundreds of university professors, the publication of scientific publications, the organization of international conferences and seminars on EE and ESD. A problem is that all this activity that mostly concerns "environmental management" and "environmental economics" is still very far from SD and ESD. It is still environmental protection and EE. The main reason for this is that SD is still at the stage of "protection of environment" not at the stage "rational management of scarce natural resources". "Environmental management" is still closer to the concept of ecology rather than to the "concept of economics" (Odum, 1953).

Polish EE has little impact on environmental consciousness, knowledge and experience and on the actions of decision makers in public bodies and business. It is limited to to decision makers connected with the Ministry of Protection of Environment. Yet, the Ministry of Protection of Environment is very weak in comparison with the Ministry of Finances, Ministry of Administration, Ministry of Economy, etc. – all oriented toward economic growth "at the cost" of nature and future generations (Kapp, 1950) and "cowboy economics" (Boulding 1966).

Of special importance is the activity coordinated by the Ministry of Science and HE, which is responsible for the national standards of academic education. The latter address future philosophers, sociologists, lawyers, economists, policy makers, administrators, managers, financials, bankers, diplomats, journalists, businessmen, etc. and do not include terms such as "nature", "ecosys-

tem", "environment" "environmental crisis", "protection of nature", "natural resources", "environmental problems", "AGENDA-21", "sustainable development", and many others. For the majority of Polish decision makers, especially in governmental bodies, their knowledge and competences on SD is restricted to what they learned during their primary school years and informal educational resources (TV, newspapers, etc.).

In summary, it could be stated, that if ESD is not based on serious, broad and diversified inter-disciplinary research on SD, SD will remain an idea and a utopia. The Polish and Poland have not only the ambition and desire, but a real need to be in the forefront of SD and ESD.

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## THE SUSTAINABLE SCHOOL AWARD

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**Key words:** sustainable school, award, schools, sustainability, education for sustainability

Under the signs of heavy recession all countries are struggling to save resources (energy, money, personnel, etc). In this respect, school heads, that under different circumstances would not be so keen on integrating aspects of sustainability in their schools, are getting more sensitive and open minded. The sustainable school forms a concise response to the emergence of the climatic change and the global financial crisis that is going to last for long. The sustainable school is a key to ESD. It comprises the field of experimentation and application of sustainability in a certain part of the society, the school. Of course, apart from this aspect that lies mainly in the field of politics, the sustainable school is a place where children love to live, learn and play.

The Sustainable School Award is a scheme that mobilizes the whole school community towards sustainability. The school community - heads, teachers, students, technical staff, canteen staff, parents, local Government - is working as a whole to achieve goals and objectives of school sustainability, while at the same time, educates the citizens of the future to be more active in the pursuit of sustainability.

The Sustainable School Award is an initiative we can find in different parts of the world (Europe-Sweden, U.K., N. America - USA, Canada, Oceania-Australia, New Zealand, etc). In Greece the initiative was undertaken by the Council of Environmental Education of ELLINIKI ETAIREIA. It is a competition between schools utilizing a number of indicators. Some of the features of the Sustainable School Award:

- It is a non compulsory competition for schools of Primary and Secondary Education.
- It is implemented on a state wide basis.
- The schools can participate for one or more years.
- The school adopts the "Whole school approach" to Education for Sustainability.
- The award is indicators oriented.

If a school wishes to take part in the competition, it has to follow the following steps:

- Submit an on-line application to [www.aeiforosxoleio.gr](http://www.aeiforosxoleio.gr)
- Form a School Sustainability Group.
- Execute a Sustainable School Audit.
- Implement the Sustainable School Management Plan.
- Develop all the scheduled activities and actions.
- Submit all data collected, at the end of the school year.

The Organizing Committee announces the Sustainable School Award at the beginning of each school year, collects the applications, publishes all the available data on the web page, organizes in-service training courses for teachers, calculates the scores for the schools. The schools that have the highest scores and are candidates for getting the Award have to undergo a special audit in order to confirm the accuracy of the submitted data. Af-

ter the winning schools are announced a ceremony is organized to praise and award the school.

Key areas of intervention for the school are:

- Administration (leading group or head)
- Teachers (all of them or at least the majority)
- Students (on a class basis and school students council)
- Parents (on a institutional or personal basis)
- School staff (cleaning staff, guards, etc.)
- Local government representative
- Integration of Sustainability across all key learning areas in the curriculum
- Participatory learning approaches
- Hidden curriculum
- Regular in service training courses for the professional development of teachers, school management and programme partners and facilitators, on sustainability and related issues.
- 'Greening' of the school and physical surroundings
- Reductions in the school's ecological footprint.

There are 50 indicators for the sustainable school. Some of them are:

- Number of non-compulsory school projects on environment, culture, etc.
- Percentage (%) of integration of sustainability issues in the curriculum
- Proportion (%) of teachers involved in the project
- Percentage (%) of penalties to students per year and per student
- Extent of parental participation in school life
- Proportion (%) of students going to school with private car/public transport/on foot
- Proportion (%) of drop outs per year of students giving up school per year
- Number of copies per student and per year
- Amount (Kg) of paper to recycle
- Amount (Kg) of waste per student and year
- Amount (Lt) of petrol per student and year
- Amount (Lt) of natural gas per student and year
- Number of energy efficient bulbs at school
- Making of compost or not
- Energy (Kwh) consumed per student and year

Sponsors of the Sustainable School Award are the WIND Corporation and the Bodosakis Foundation.

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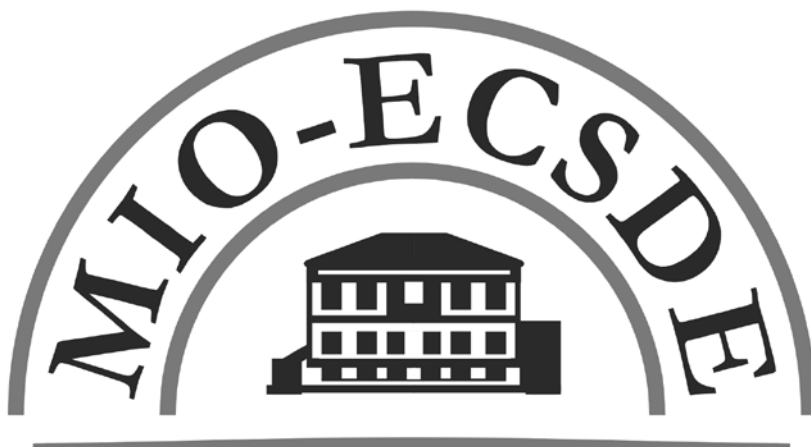


Views of the Group work during the workshops.



During the last day, on the way to the airport the participants had the opportunity to visit the archeological area of Delfi, the site of the Delfic Oracle (Pythia) the most important oracle in the classical Greek world.





## MIO-ECSDE Profile

The Mediterranean Information Office for Environment, Culture and Sustainable Development, is a Federation of Mediterranean Non-Governmental Organizations (NGOs) for the Environment and Development. MIO-ECSDE acts as a technical and political platform for the intervention of NGOs in the Mediterranean scene. In cooperation with Governments, International Organizations and other socio-economic partners, MIO-ECSDE plays an active role for the protection of the environment and the sustainable development of the Mediterranean Region.

### Background

MIO-ECSDE became a federation of Mediterranean NGOs in March 1996. Its roots go back to the early 80s, when the expanding Mediterranean membership of the European Community encouraged the European Environmental Bureau (EEB) to form its Mediterranean Committee supported by Elliniki Etairia (The Hellenic Society for the Protection of the Environment and the Cultural Heritage). The Mediterranean Information Office (MIO) was established in 1990 as a network of NGOs, under a joint project of EEB and Elliniki Etairia and in close collaboration with the Arab Network of Environment and Development (RAED). The continuous expansion of MIO-ECSDE's Mediterranean NGO network and the increasing request for their representation in Mediterranean and International Fora, led to the transformation of MIO-ECSDE to its current NGO Federation status. Today it has a membership of 112 NGOs from 26 Mediterranean countries.

### Our Mission

Our mission is to protect the Natural Environment (flora and fauna, biotopes, forests, coasts, natural resources, climate) and the Cultural Heritage (archaeological monuments, and traditional settlements, cities, etc.) of the Mediterranean Region. The ultimate goal of MIO-ECSDE is to promote Sustainable Development in a peaceful Mediterranean.

### Major tools and methods

Major tools and methods used by MIO-ECSDE in order to achieve its objectives are the following:

- Promotion of the understanding and collaboration among the people of the Mediterranean, especially through their NGOs, between NGOs and Governments, Parliaments, Local Authorities, International Organizations and socio-economic actors of the Mediterranean Region.
- Assistance for the establishment, strengthening, co-operation and co-ordination of Mediterranean NGOs and facilitation of their efforts by ensuring the flow of information among relevant bodies.
- Promotion of education, research and study on Mediterranean issues, by facilitating collaboration between NGOs and Scientific and Academic Institutions.
- Raising of public awareness on crucial Mediterranean environmental issues, through campaigns, publications, exhibitions, public presentations, etc.

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