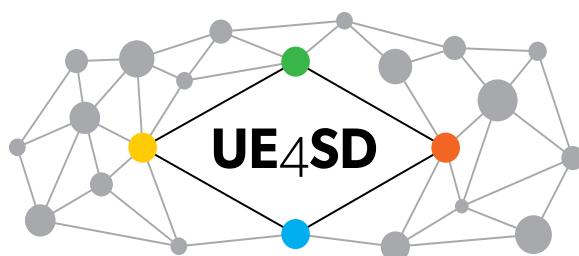


LEADING PRACTICE PUBLICATION

Professional development
of university educators
on Education
for Sustainable Development
in European countries



UNIVERSITY EDUCATORS
FOR SUSTAINABLE DEVELOPMENT

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UNIVERSITY EDUCATORS
FOR SUSTAINABLE DEVELOPMENT

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HOW TO REFERENCE INDIVIDUAL CASE STUDIES?

1/ Case study example:

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<http://www.ue4sd.eu/outcomes>

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ABBREVIATIONS

DESD	UN Decade of Education for Sustainable Development
ESD	Education for Sustainable Development
GAP	Global Action Programme on ESD
HE	higher education
HEI(s)	higher education institution(s)
LPP	Leading Practice Publication
MDGs	Millennium Development Goals

GLOSSARY

Explanation of terms used in this publication:

Education for Sustainable Development:

a broad and comprehensive educational concept, encompassing interrelated environmental, economic and social issues; it focuses on how we 'do' education and how we respond to sustainability imperatives by rethinking our methods, revising our courses, recasting our priorities, and reorienting our communities of practice (UNECE, 2009; UE4SD, 2014)

Tertiary vs. higher education:

tertiary education is the third level of education, incl. vocational education; higher education is normally taken to include undergraduate and postgraduate education usually provided in distinct institutions such as universities (UNECE, 2009)

University educator:

a person who has teaching responsibilities in a higher education institution, incl. universities, universities of applied science and institutes or colleges of higher education (UE4SD, 2014)

ESD competences for university educators:

a set of skills and capabilities to achieve systemic changes and to act as learning facilitators for ESD (UNECE, 2011; UE4SD, 2014)

Professional development:

formal and non-formal learning opportunities that foster capability levels, incl. short courses, teaching support initiatives, seminars, staff induction, mentoring and coaching programmes, etc. (UE4SD, 2014)

UNECE region:

a multilateral platform facilitating greater economic integration and cooperation among its 56 member states and promoting sustainable development and economic prosperity, including countries of Europe, countries in North America (Canada and United States), Central Asia (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan) and Western Asia (Israel)

COPERNICUS Alliance:

European Network on Higher Education for Sustainable Development, initiator of the UE4SD project

UE4SD project:

a project funded by the European Commission under Lifelong Learning Programme Erasmus Academic Networks (2013–2016) currently including 53 partners from 33 countries across Europe, this publication is an outcome of the UE4SD project

PD	professional development
SD	sustainable development
SDGs	Sustainable Development Goals (UN 2030 Agenda for Sustainable Development)
UE4SD	University Educators for Sustainable Development
UN	United Nations
UNECE	UN Economic Commission for Europe
UNESCO	United Nations Educational, Scientific and Cultural Organization

State of the art report: summary of the mapping stage done by the UE4SD consortium in 2014, full reference: *UE4SD (2014) Mapping opportunities for professional development of university educators in Education for Sustainable Development: A state of the art report across 33 UE4SD partner countries. Authors: Mader, M., Tilbury, D., Dlouhá, J., Benayas, J., Michelsen, G., Mader, C., Burandt, S., Ryan, A., Mulà, I.; Barton, A., Dlouhý, J., and Alba, D. University of Gloucestershire, Cheltenham, 57 pp.*

Leading Practice Publication: this publication, full reference: *UE4SD (2015) Leading Practice Publication: Professional development of university educators on Education for Sustainable Development in European countries. Editors: Kažitulčinová, D., Dlouhá, J., Ryan, A., Dlouhý, J., Barton, A., Mader, M., Tilbury, D., Mulà, I., Benayas, J., Alba, D., Mader, C., Michelsen, G., Vintar Mally, K. Charles University in Prague, Prague, 136 pp.*

Good practice examples: examples of professional development of university educators on ESD identified by the UE4SD Steering Group during the mapping stage of the UE4SD project (defined in the State of the art report)

Best practice examples: examples identified as leading practices by the UE4SD Steering Group for this publication (criteria in this LPP, see Section 4.1)

Case studies: best practice examples described in this publication, including the text, photos, diagrams, further readings, etc. (see Chapter 4)

'Large' case studies: case studies with length of 5-7 pages, described in more depth (see Chapter 4)

'Small' case studies: shorter case studies with length of 2-4 pages (see Chapter 4)

Online Platform of Resources: a collection of good practice examples of professional development opportunities for European higher education staff, it includes all of the case studies presented in this publication, as well as more good practice examples from the UE4SD project, and various other materials relating to ESD professional development in European higher education, access via the UE4SD website: <http://www.ue4sd.eu/>

INTRODUCTION

This Leading Practice Publication (LPP) is the result of nearly two years of work on the European project *University Educators for Sustainable Development* (UE4SD) building on the knowledge and experience of 53 partners from 33 countries active in the area of Education for Sustainable Development (ESD) at European higher education institutions (HEIs). In these two years (2013-2015), a wealth of information has been gathered and we are pleased to share with you some of the key findings and experiences gained during the project in this publication.

The aim of this book is to:

- 1) *provide an overview* of the best practice examples of professional development opportunities for European university educators in the area of ESD; and to
- 2) *inspire the reader* to engage in supporting further developments in this field.

We believe that this book can serve as a reference point for current best practice in this important field of European higher education (HE), helping to pave the way towards a future in which all university educators have the opportunity to acquire relevant professional development in ESD.

→ What can you find in this book?

This publication is structured into nine sections (see **Figure A**). It starts with an **INTRODUCTION** (this section) and an **EXECUTIVE SUMMARY** that aim to provide the reader with the most essential information contained in this book. These sections should therefore allow a quick overview of the entire publication and the key outcomes, leaving the option to select the main parts of interest for further reading in the chapters that follow as and when required.

The three **introductory chapters** (**CHAPTER 1-3**) are intended to outline the con-

text of the publication and to introduce the concept of the professional development of university educators in the area of ESD. The chapters also describe the key methodological principles and define the terminology used in the publication so that general understanding is achieved.

The core part of this publication – including the **13 best practice examples** – is presented in **CHAPTER 4**. The chapter starts with a short overview of the selection and development of the best practices and follows with the individual examples as sub-chapters.

The last two **summary chapters** (**CHAPTER 5 & 6**) provide a reflection of experience gained from the best practice examples and outline possible ways forward.

References and relevant further readings are provided in each chapter. An overview of all UE4SD products and materials, as well as further useful resources are provided in **RESOURCES** at the end of the publication.

→ Who is this book for?

This book is in its broadest sense intended for all stakeholders who are concerned with professional development of staff, and particularly those in the higher education sector. It is therefore relevant for anyone who teaches, supports learning, or works in staff development in higher education.

This includes the following stakeholders¹:

- *Those engaged in the activities of higher education institutions* – for example: University Executive, Council or Boards, registrars and administrative officers, academic managers and implementers, staff development teams, researchers, educators, quality assurance professionals, students and student groups
- *Those engaged in the higher education system* – for example: national ministries with agendas relating to HE and ESD and their

1) Modified according to the Rio+20 Treaty on Higher Education (on Box 1), available from http://hetreatyrio20.com/wordpress/wp-content/uploads/2013/06/treaty_rio.pdf

administrative offices, European policy makers, funding agencies, quality assessment bodies, international organisations

- *Those forming part of the communities which the higher education system serves* – for example: NGOs, professional bodies, community educators, businesses and young people, professional mentors and trainers

From this diverse range of potential users of this publication, three key target groups have been identified that will most likely directly benefit from the information contained herein.

The 3 key target groups of this book include:

- **Educators** – primarily higher education academic staff, but also educators in other sectors
- **University leadership** – University Executive, Council or Boards, registrars and administrative officers, academic managers and implementers, staff development teams (including centres for continuing education)
- **Policy makers** – ministers of education and higher education (and other relevant ministries), European policy makers

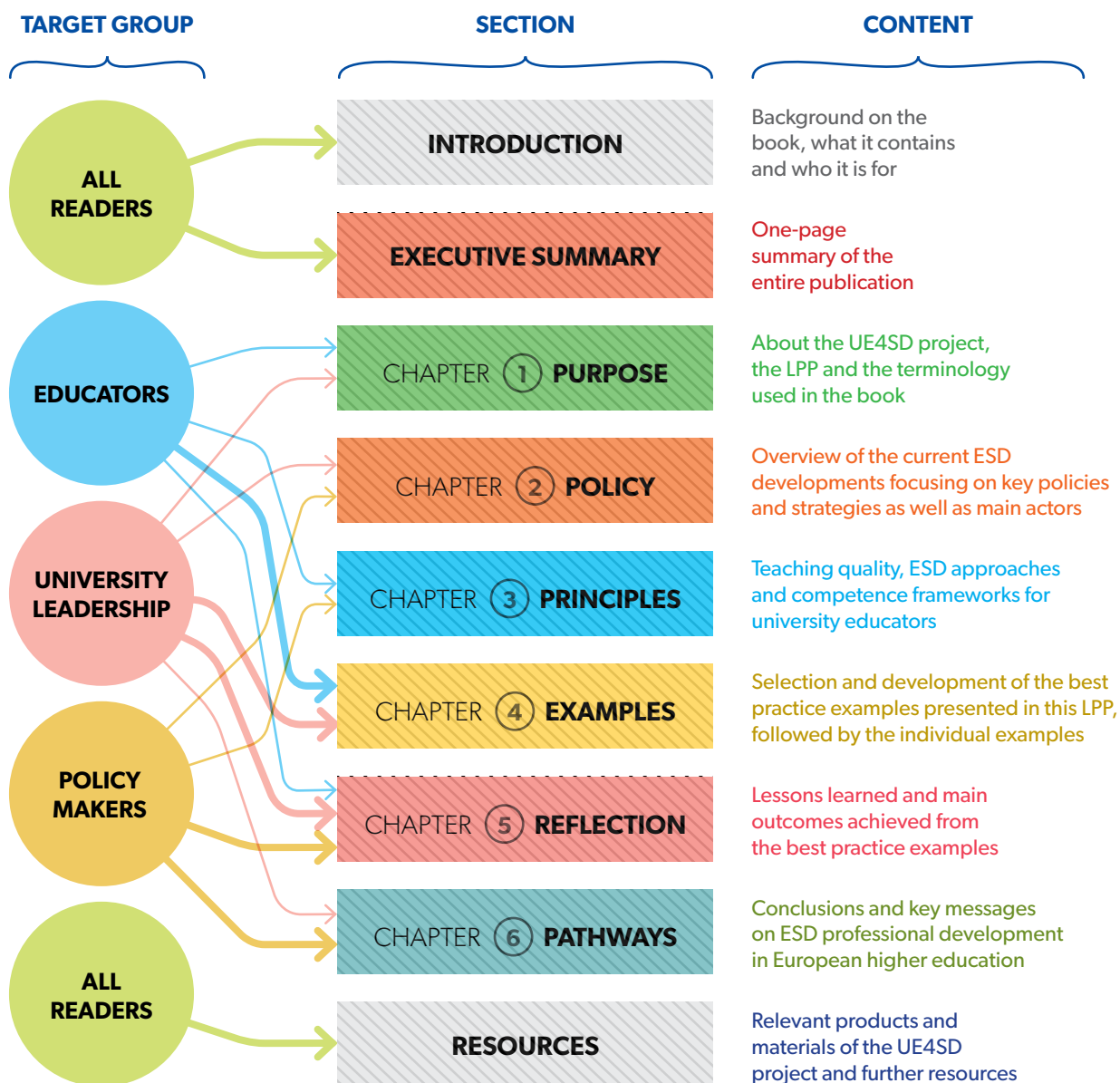


Figure A – Schematic overview of the structure and key target groups of this book; the arrows indicate which parts of the publication are of highest relevance to the respective target groups, small arrow = good relevance, large arrow = high relevance; target groups and relevance are only indicative

A schematic overview indicating which parts of the publication will likely be of highest relevance to the key target groups is shown in **Figure A**. The sections of the book have been written in a way that enables reading through selected chapters only. Based on the reader's main interest, it is easy to choose what and when to read without losing the context. Please note that the target groups and relevance in Figure A are only indicative – feel free to read the book in a way that best addresses your particular needs and interests!

→ How should this book be used?

We hope that you will find a practical use for the book regardless of your position in the higher education system. The expected ways of using this resource include (but are not restricted to):

- strategic decision-making on different HE policy levels
- using it as a framework for educators' self-reflection and assessment of their own work
- assisting professional development teams at universities as a background resource and for inspiration

Please note that we have not included any methodological chapter outlining how to use the case studies of best practice examples presented in this book (Chapter 4), because these case studies should not be used in any prescriptive way. Rather, these should be critically assessed and possibly adjusted to different contexts.

To make this book as user-friendly as possible in your professional life, we have included a few easy tools that link this book directly with the “online world”:

- **QR codes** providing direct links to online resources, simply scan the QR code with your tablet/smartphone and it takes you directly to the resources (suitable for the printed paper version)
- **direct links** to relevant initiatives, activities, etc. throughout the publication (from the pdf version only)

→ Where to find more information?

This Leading Practice Publication – like every publication – is by its nature restricted in length and the number of copies available for distribution. The publication is therefore available in print and in an electronic pdf format. In addition, the UE4SD project created an Online Platform of Resources containing all of the case studies presented in this publication, as well as more good practice examples and various other materials relating to ESD professional development in European Higher Education. You can explore all these materials by visiting the UE4SD project website and navigating to the Online Platform from there: <http://www.ue4sd.eu/>

If you have any questions or comments regarding the publication or the UE4SD project, please contact the UE4SD Project Coordinator at: ue4sd@glos.ac.uk.

EXECUTIVE SUMMARY

This Leading Practice Publication (LPP) is the outcome of the European project *University Educators for Sustainable Development (UE4SD)* supported from the EU Lifelong Learning Programme and gathering 53 partners from 33 countries active in the area of Education for Sustainable Development (ESD) at European higher education institutions (HEIs).

The LPP presents 13 best practice examples on professional development (PD) of university educators in the area of ESD from 10 European countries. It is intended for all stakeholders who are concerned with professional development of staff, and particularly those in the higher education (HE) sector.

The LPP contains six main chapters pertaining to various aspects of European PD in ESD at the higher education level:

CHAPTER 1 PURPOSE

highlights the importance of the HE sector in addressing the challenges of sustainable development and in educating the future generation of leaders. It also stresses the need for HE staff to continually develop their ESD skills and competences to support the transition towards sustainable development practices. Despite the currently limited offerings of PD on ESD for university educators, a number of outstanding initiatives already exist in various countries throughout Europe and this publication presents a detailed description of these best practice examples.

CHAPTER 2 POLICY

provides an overview of ESD strategy documents and current global developments including the UN Decade on ESD, the Global Action Programme or the UNECE Strategy on ESD. It also highlights the relatively high autonomy of HEIs in many areas of their operations, which is an important aspect to consider during implementation of international and national strategies and policies. Discussions over educational theories, practices and initiatives which can support ESD transition at this level are therefore crucial.

CHAPTER 3 PRINCIPLES

deals with basic principles of ESD, teacher competences, quality enhancement and PD at HE level. It is argued that since ESD brings pedagogical innovation to HE teaching, ESD related criteria should be included in the guiding principles

for PD of educators and quality indicators of PD. Competence-related quality criteria are currently non-existent at the HE level and this deserves further attention. The best practice examples in this publication can provide some initial ideas for future developments.

CHAPTER 4 EXAMPLES

presents information on the selection process and development of the 13 best practice examples that follow as individual case studies. Detailed descriptions of PD initiatives ranging in type, scale and location are included.

CHAPTER 5 REFLECTION

summarises on the 13 case studies and provides an overview of key lessons learned. Existing networks seem to be a good supporting factor for the development of successful PD initiatives at various levels of engagement. Pedagogical approaches and ESD framing varies among the examples, but generally includes mainly participatory approaches and action learning among others. Financial as well as non-financial support from the top leadership at institutional level are critical factors for the success of the PD initiatives.

CHAPTER 6 PATHWAYS

concludes with key messages and recommendations for future developments. **Policy-makers and university leadership should acknowledge the need for PD opportunities for teaching staff, including the positive role of ESD in teaching quality enhancement, and to provide support for the development of such opportunities throughout Europe. Teachers are encouraged to ask for and make use of good-quality PD opportunities.**

CHAPTER 1

PURPOSE

Professional development
of university educators on ESD
in Europe - why this book
and what it contains?

Authors:

Dlouhá, J., Kapitulčinová, D., Barton, A.,
Ryan, A., Tilbury, D., Mader, M., Mulà, I.

It has been recognised that our education systems are critical to achieve the transition towards sustainability as they equip learners with the knowledge, skills and attitudes needed to re-orient social structures and systems. Specifically, the higher education sector is critically positioned to address sustainable development as it educates the future generation of leaders, challenges dominant paradigms and produces ground-breaking research.

However, for HEIs to meet their full potential in this regard, all aspects contributing to good-quality education need to be supported. One of the current core issues in higher education for sustainable development is the lack of information and opportunities in the professional development of European higher education staff in ESD. Therefore, a project has been initiated in 2013 at the University of Gloucestershire and partner institutions to

support university staff to enhance their competences in ESD and related academic leadership capabilities. The idea of the project resulted from the evidence that re-orienting higher education curricula towards sustainable development requires the development of skills for high-quality ESD guidance and support if universities are to contribute to a more sustainable future.

The project – called *University Educators for Sustainable Development* – therefore took on the task to establish professional development approaches and opportunities that would enable teaching colleagues to prepare students, regardless of their courses or specialisations, to understand and apply their professional and global responsibilities in sustainability. In the years that followed, it has been proven that the selected theme is a good basis for collaboration among a very diverse group of partners enabling discussion among different institutional and policy cultures across European higher education institutions.

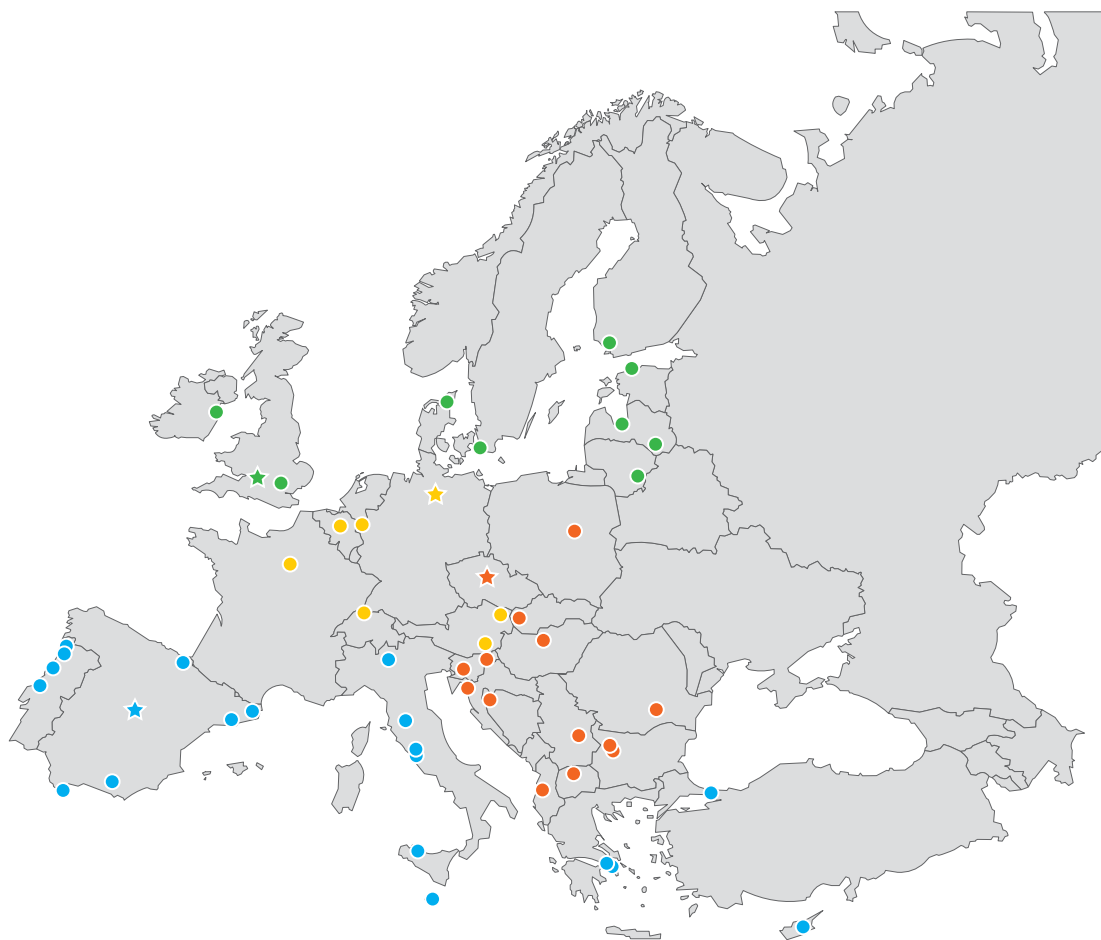


Figure 1.1 – Map showing the current 53 UE4SD partner institutions grouped into four regional hubs: North – green, South – blue, East – red, West – yellow, stars mark the four coordinating institutions. A list of partners is provided on the inner side of the book cover (as of August 2015).

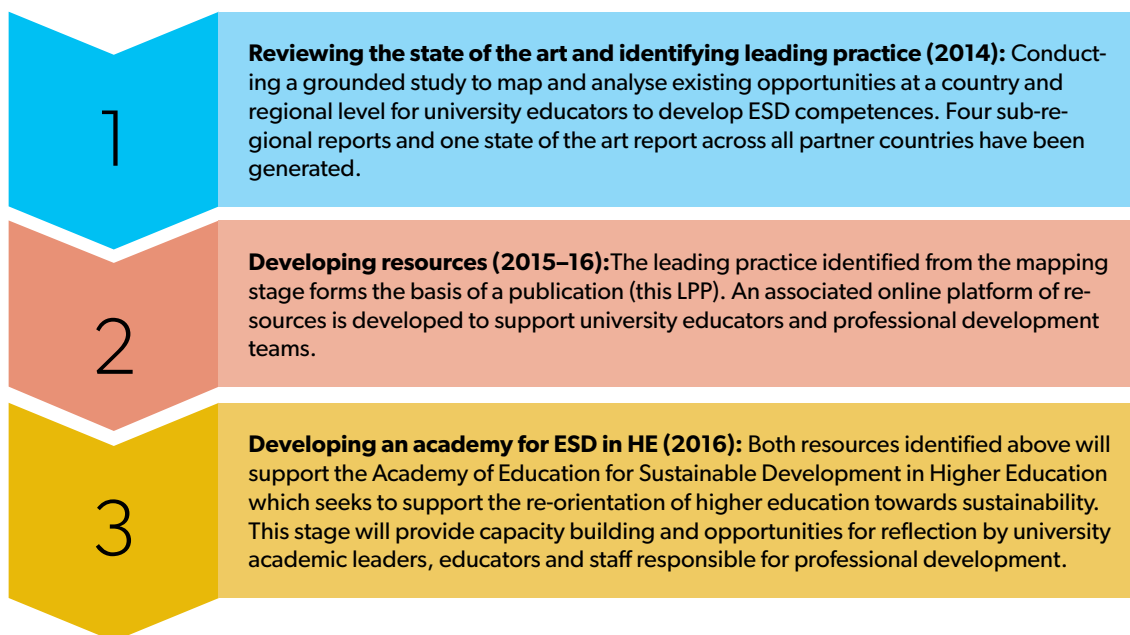


Figure 1.2 – An overview of the time frame of the UE4SD project describing the three major stages of activities. This Leading Practice Publication (LPP) is part of Stage 2: Developing resources for university educators on ESD professional development.

1|2 The UE4SD Project

The University Educators for Sustainable Development (UE4SD) project funded by the European Commission under Lifelong Learning Programme Erasmus Academic Networks (2013–2016) includes 53 partners from 33 countries across Europe that are grouped into four regional hubs (see **Figure 1.1**). The lead partner, the University of Gloucestershire (UK – North Hub), works closely with three core partners: the Autonomous University of Madrid (Spain – South Hub); Charles University in Prague (Czech Republic – East Hub); and Leuphana University of Lüneburg (Germany – West Hub).

With this European scope UE4SD seeks to combine and share the expertise of network partners so that they can inform policy and practice. In all of the countries involved, leading expert groups in ESD in higher education are being established throughout the project's duration. Detailed information about the partnership has been provided in the project's [State of the Art Report](#) (UE4SD, 2014) and is available also at the [UE4SD project website](#) (see RESOURCES, p. 130). The UE4SD is also supported in its professional networking and partnership development by

COPERNICUS Alliance, the European Network of universities committed to advancing sustainable development in education, research and practice, through the efforts of the European Higher Education sector².

The UE4SD project runs from 2013 to 2016 and includes three distinct stages, building an understanding of the situation at European HEIs and developing an effective response. An overview of the time frame of the project is depicted in **Figure 1.2**.

The *first stage* of the project (2014) mapped the status of ESD in higher education and existing ESD professional development opportunities for university educators in the European region. As a result, four regional reports (UE4SD North, West, South, East) which summarised national mapping exercises conducted by 53 UE4SD partner institutions were compiled as part of the State of the Art Report (UE4SD, 2014). This report analysed the situation and drew conclusions for all 33 countries across Europe, representing an area with more than 3,000 higher education institutions and over 24 million students.

The mapping exercise showed that ESD is gaining importance in higher education

²) See Box 2.2 in Chapter 2 for more information about the COPERNICUS Alliance

across Europe, but the understanding of ESD and approaches to it differ. The report revealed that in the majority of countries (especially in the East and South), ESD at the HE level is in the initial stages of academic discussions and many university educators lack opportunities for professional development in this area. There are, however, a number of countries in all four regions where individuals and institutions are taking strategic and ‘whole-of-institution’ approaches to the development of ESD, including professional development opportunities. The report has identified several valuable examples of good practice in the four UE4SD regions, providing an overview of the diverse approaches to professional development in ESD in Europe (UE4SD, 2014).

The *second stage* (2015–2016) of the UE4SD project includes the development of practical resources for university educators in ESD. This Leading Practice Publication and an associated Online Platform of Resources are part of this stage. The Online Platform of Resources is a collection of good practice examples of professional development opportunities for European higher education teachers; it

contains the examples presented in this publication, as well as further interesting examples, policy information, an overview of ESD principles and competences, and more. It can be accessed via the [UE4SD project website](#).

The *third stage* (2016) will include the development of an Academy for ESD in Higher Education based on the methodological materials and other resources collected in the first two stages of the project (see **Figure 1.2**).

1|3

The Leading Practice Publication (this book)

This Leading Practice Publication (LPP) offers a detailed description of **13 selected best practices** of professional development at the HE level from all four UE4SD regions involved (Chapter 4). It includes a brief overview of **ESD policies and principles** that support the application of this material in practice (Chapters 2 and 3). It has been built upon the experience gained from the mapping stage of the project and it aims to address the need for **ESD professional development tools** that would assist in improving the current situation.

▼ UE4SD partners at the Annual General Meeting in Prague, October 2014



We offer this publication as a **palette of examples** to see the diversity of approaches in ESD at the HE level and to present the current best practice in this area in Europe³. The best practice examples in this publication show the current European scope of ESD pedagogy and its benefits, as well as some general principles of quality enhancement in this sphere. An important aspect is also the development of ESD competences among university educators as well as their students. Given the general relevance of the theme in question, the examples could be used as models for achieving desired transformations under different policy, cultural conditions and traditions at European higher education institutions.

For a **list of abbreviations** and a **glossary** of key terms used in the book, see p. 8–9.

1/4 Summary

The higher education sector is critically positioned to address sustainable development as it educates the future generation of leaders, challenges dominant paradigms and produces ground-breaking research. To support the transition towards sustainable development practices in our society, higher education staff need to continually develop their ESD skills and competences. However, opportunities for ESD professional development are currently very limited across European countries. The UE4SD project therefore took on the task to map the currently existing policies, strategies and opportunities supporting ESD professional development for university educators and to identify current best practice. This Leading Practice Publication presents the selection of 13 best practice examples from 10 European countries providing university staff development on ESD.

References

UE4SD (2014) Mapping opportunities for professional development of university educators in Education for Sustainable Development: A state of the art report across 33 UE4SD partner countries. Authors: Mader, M., Tilbury, D., Dlouhá, J., Benayas, J., Michelsen, G., Mader, C., Burandt, S., Ryan, A., Mulà, I., Barton, A., Dlouhý, J., and Alba, D. University of Gloucestershire, Cheltenham, 57 pp.; <http://www.ue4sd.eu/outcomes/2014-12-16-14-08-40>

³) The list of examples does not claim to be complete. It is rather a selection of good practices in European HE and should not be considered an exhaustive list.



CHAPTER 2

POLICY

ESD framing
and professional development
in European higher education

Authors:

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This chapter presents a brief overview of the current ESD scene in the global, regional and national context, and outlines ESD principles and policies relevant for educators' professional development in European higher education. It is concerned with the specifics of ESD in HE focusing on frameworks, strategies, institutional policies and conditions for individual initiatives at the bottom-up level. The roles of key actors and platforms advancing ESD policy in the EU and globally are also discussed.

2|1 ESD strategy documents and current global developments

When the UN Decade for ESD (DESD) finished in 2014, its reflection in the final report (UNESCO, 2014) provided evidence of progress in building solid ESD foundations. The report noted steps that have been taken across all regions and countries, to integrate its principles and practices into all areas of

education and learning. It has been concluded that ESD works as an *enabler* for sustainable development (key finding 1), galvanizing *pedagogical innovation* (key finding 3) and involving *key stakeholders* including those beyond the education sector (key finding 2). Despite the clear progress, ESD still has not reached its full potential and remains to be implemented systemically, with more attention paid to related research and innovation. At the higher education level, the DESD report (UNESCO, 2014) found numerous existing tools, reporting frameworks, institutional networks, good practices and other mechanisms to extend the impact of HE teaching on SD. But it also identified current ESD challenges: existing HE commitments are not tackled in a coherent way, there are difficulties in overcoming disciplinary boundaries, and deficiencies in university educators' professional development exist. As the report states: "Deeper innovation in staff development and across institutions is necessary to transform curricula and pedagogy" (UNESCO, 2014, p. 112).

KEY MILESTONES IN GLOBAL ESD

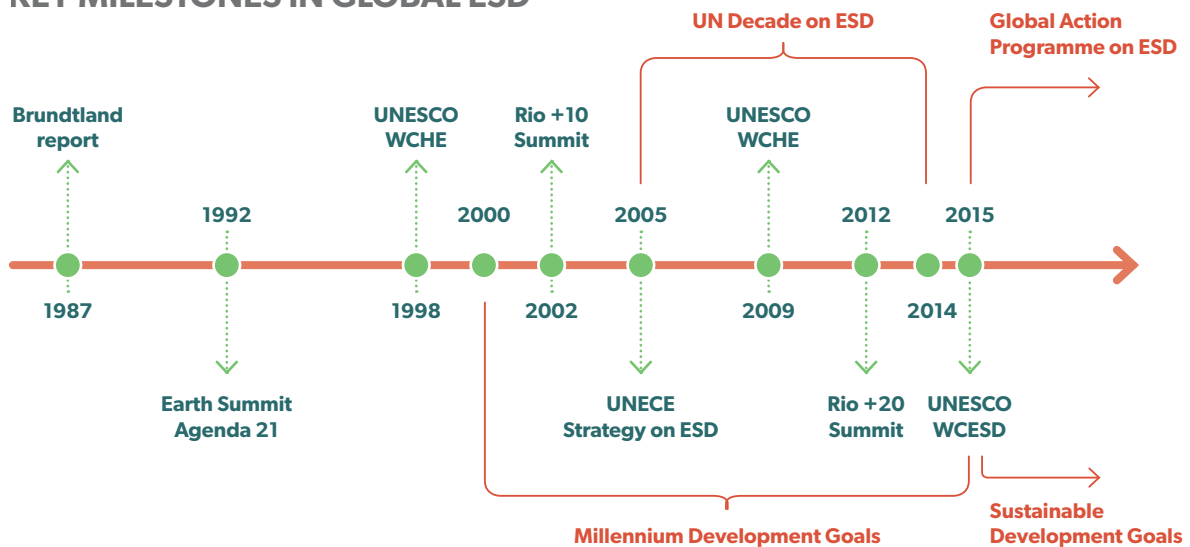


Figure 2.1 – Timeline of the progress of ESD global efforts with an impact on HE in the UNECE region; Brundtland Report (“Our Common Future”) = report that defined the meaning of the term sustainable development (SD); Earth Summit = United Nations Conference on Environment and Development held in Rio de Janeiro; Agenda 21 = voluntary implementation action plan for SD adopted at the Earth Summit; UNESCO WCHE (1998) = UNESCO World Conference on Higher Education held in Paris; Rio+10 Summit = UN World Summit on Sustainable Development held in Johannesburg, UNECE = United Nations Economic Commission for Europe established in 1947 to encourage economic cooperation among its member states, UNESCO WCHE (2009) = UNESCO World Conference on Higher Education held in Bonn; Rio+20 Summit = UN Conference on Sustainable Development held in Rio de Janeiro; UNESCO WCESD = UNESCO World Conference on Education for Sustainable Development held in Japan

These achievements identified at the HE level by the end of 2014 were preceded by long-lasting discussions on the role of HE in SD implementation. The Tbilisi conference in 1977 stressed in its Declaration the importance of environmental education at all ages, and since then, a number of key ESD documents have outlined the role of tertiary education in transforming our society towards sustainability. In Chapter 36, Agenda 21 (UN, 1992) universities and research centres were recognised as important stakeholders, and Member States encouraged to support their (re)orientation towards sustainability. In the Johannesburg Plan of Implementation (UN, 2002b) this has been further elaborated: capacity building in (E)SD (§ 108) and stakeholder collaboration (§ 106) have been highlighted as key approaches with regard to universities and research institutions. To put these principles in HE practice, the United Nations General Assembly was recommended to adopt a Decade of Education for Sustainable Development starting in 2005 (§ 124, *ibid.*). The timeline in **Figure 2.1** shows some of the milestones of the global ESD efforts pertaining to HE in the UNECE region.

UNECE region in the context of DESD

The UN Decade of ESD was implemented in the UNECE region through the *Strategy on Education for Sustainable Development* adopted by representatives of member states in Vilnius in 2005 with the aim to “encourage UNECE Member States to develop and incorporate ESD into their formal education systems, in all relevant subjects, and in non-formal and informal education” (UNECE, 2005, p. 2). The Strategy was implemented in three phases with gradual priorities (from capacity building to full integration of ESD) which were assessed at national as well as the entire UNECE level. Three reports based on progress indicators (cf. UNECE, 2009) showed considerable development across the region, including adoption and implementation of national ESD strategies inspired by the UNECE documents in some of the countries. The UNECE final report reflects the last phase (2010-2015) and outlines success in policy integration, advancing curricula, tools and resources, and networking, while there is still need for full integration of ESD across all levels of education, and adequate research, monitoring and evaluation (Creech & Buckler, 2015).

One of the *UNECE Strategy on ESD*’s objectives was to equip educators with the com-

petences to include sustainable development in their teaching. As consequently reported, the concept was reflected mainly in teacher training - ESD competences were reflected in an initial and in-service training by more than 80 % of the UNECE countries (Creech & Buckler, 2015). The matrix of educators’ competences in ESD developed by the UNECE expert group (UNECE, 2011) was also used as a starting point for the mapping and description of educators’ competences in higher education in the UE4SD project with the aim to support professional development of educators (UE4SD, 2014).

Currently, the Draft of the UNECE future implementation framework is being prepared to be adopted in 2016 on the high level UNECE conference Environment for Europe. These discussions are traditionally related to global processes: especially the Global Action Programme (GAP) on ESD endorsed by UNESCO Member States as a follow-up to the DESD. The GAP plans to mobilise stakeholders to generate and scale up ESD actions initiated within the DESD. Goals to build capacities for educators and trainers (one of its five priority areas) at the HE level include “... an integration [of ESD] into faculty training in higher education institutions to enhance capacity in teaching sustainability issues, conducting and supervising solution-oriented interdisciplinary research, and informing policy-making on ESD and sustainable development...” (UN, 2013, Annex I - p. 4). ESD is also part of the global post-2015 sustainable development agenda - termed the 2030 Agenda for Sustainable Development - in the framework of the Sustainable Development Goals (SDG) preparatory process. SDGs as a successor of the Millennium Development Goals (MDGs) are informed by the GAP; education on all levels is considered to be one of the crucial factors to meet the set SDGs within the new 2030 Agenda. Specifically, it has been included in Goal 4, Target 4.7, stressing “knowledge and skills needed to promote sustainable development” (UN, 2014, p. 13).

2|2 Specifics of ESD in higher education

ESD discussions at the policy level are reflected also in the dialogue and initiatives at HE institutions. In general, it has been realized that “higher education institutions are well positioned to link the regions, transcend disciplinary boundaries as well as local and

global dimensions of development. They are recognised for their influence on policy directly, as well as indirectly, through the education of policy makers. They are influential in the development of leaders and shaping histories” (COPERNICUS Alliance, 2013, p. 2). To achieve its societal role, HEIs should transform themselves; this transition towards ESD should however respect internal dynamics and autonomy of HE institutions in the broader European HE policy framework.

Principles of HE transformation towards ESD

Through DESD it has been stressed that HEIs can greatly contribute to sustainable development but the effort should be more holistic (Sibbel, 2009; Sterling, Maxey and Luna, 2013), and whole-institutional instead of compartmentalised (Lozano et al., 2014). Consequently, deep transformation at the institutional level should be achieved in a “dynamic equilibrium” of different structural components (Waas et al., 2012).

General principles and vision of such a holistic HE transformation are outlined in the Rio+20 Treaty on Higher Education (COPERNICUS Alliance, 2013). It builds upon numerous international statements and commitments, national declarations and initiatives that aspire to redefine higher education, while involving a range of stakeholders from different parts of the world in the dialogue over the principles of this process. Read more about the Treaty in **Box 2.1**.

Barriers and opportunities of ESD transformation in HE

The need for implementation of ESD processes is still far from being widely accepted on the HE level. Ferrer-Balas et al. (2008) identify the following barriers to the sustainability transformation at universities: *lack of pressure from the society; academic freedom; incentive structure; and conservative administration*. According to the authors, one of the perceived obstacles is that universities act autonomously: their orientation depends mainly on individual decisions, while an overall academic system and culture play a role as well. This can be, however, interpreted also as an opportunity. The suggested drivers for the transformation are: *pressure from peer institutions; sources of funding available; size; coordination unit; leadership; champions; and connectors*. The last three drivers represent internal factors, which indicate that activities at universities are often influenced

Box 2.1

RIO+20 TREATY ON HIGHER EDUCATION



The Rio+20 Treaty on Higher Education was launched at the UN Rio+20 Summit and presents the collective vision of higher education networks, groups and institutions that are seeking to build more sustainable futures. The preparatory process involved over 30 international higher education agencies, civil society organisations, associations and student networks. The Treaty was signed in 2012 by over 80 signatories.

The Treaty outlines eight evolving transformation principles; it offers commitments in four areas of higher education activities (culture, campus, curriculum, community), and envisages actions of signatories in the short, medium and long term.

More information:
<http://hetreatyrio20.com/>

at the bottom-up level (Ferrer-Balas et al., 2008). This might be an opportunity if bottom-up initiatives receive sufficient support. There is also an evidence that ESD policies at the HE level which are often formulated as declarations and commitments (UNESCO, 2014) require initiatives from the bottom-up to be translated into actions (cf. Lukman and Glavič, 2007).

213 European key ESD actors and platforms

The implementation of ESD in Europe is driven by major **intergovernmental institutions** active in the field of education (e.g. UNESCO, UNECE), and **national governments** having the duty to implement joint strategies (e.g. to develop national ESD Strategies and join the process of implementation of the European Strategy on ESD). **Frameworks** for

democratic processes of discussion are usually set to clarify problematic points in reaching a consensus on the formulation and implementation of the common strategies (e.g. the Environment for Europe process with series of conferences of ministers of the environment and education where the current ESD strategy has been approved and which also oversee the process of its implementation).

Due to the bottom-up character of many sustainability processes, **networks** of HE institutions can be considered as important drivers in ESD. Within the European Strategy on ESD and its follow-up, these networks and associations were recognised as **key actors**

which can contribute to important strategic decisions on the European level.

The role of ESD networks is to raise necessary capacities (often lacking in a single institution), support interdisciplinary team building and efficiently work with varied resources and expertise. Networks can also assist where “critical mass” of ESD leaders is not yet developed in one institution, and mutual support over the network is crucial for local success. Sharing of good practices among network members is one of the possibilities to systemize the innovations. For an example of a European network active in ESD in higher education and their networking activities, see **Box 2.2**.

Box 2.2:

COPERNICUS ALLIANCE

The COPERNICUS Alliance is the European Network on Higher Education for Sustainable Development. The **vision** of the COPERNICUS Alliance is to promote the role of Sustainable Development in European higher education to improve education and research for sustainability in partnership with society.

To achieve this goal, the following methods are applied:

Networking: collaboration to promote sustainable development in European higher education

Communication/Outreach: to facilitate exchange and through dialogue and research, enhance knowledge on Education for Sustainable Development between European higher education and with other stakeholders in society.

Advocacy/representation: to promote Higher Education for Sustainable Development in European policy and to represent its members’ interests

Professional development: to disseminate tools for sustainability integration in higher education and to share innovative practice in pedagogical methodology

More information: <http://www.copernicus-alliance.org/>



National and regional ESD policies: Situation in UE4SD European countries

The majority of ESD strategies, policy documents and processes work with ESD in general and do not sufficiently address HE specifics. To cope with the challenge of ESD implementation at the HE level, and especially to prepare educators to use innovative approaches in their teaching, the UE4SD project has mapped the state of the art of national ESD policies for HE across 32 partner countries in Europe. In the summary Report (UE4SD, 2014), 85% of the UE4SD countries (27 out of 32) mentioned that strategies or policies recognising ESD in HE exist at the national or regional level. These include ESD and DESD strategies, HE acts on ESD and development plans for HE, sustainability or Agenda 21 strategies, and national legislation addressing ESD, see **Figure 2.2** below.

Half of the UE4SD partners (16 in total) reported on specific national ESD strategies, which in some countries are informed by global ESD declarations, such as the UN Decade on ESD or the UNECE strategy

(**Figure 2.2, column 1**). The ESD processes promoted in these strategies often refer to strategic and whole-of-institution approaches, underlining principles of participatory learning and systemic thinking. Several of the strategies cover general aspects of ESD, but do not address HE and ESD competences of university educators in particular. In 40% of the countries (13 in total), HE acts explicitly encourage HE institutions to develop and implement ESD concepts (**Figure 2.2, column 2**).

Besides mapping national strategies and guidelines on ESD, UE4SD partners were also asked to estimate the occurrence of ESD policies of HEIs in their countries. Approximately one third of the partners estimated that several or many institutions have incorporated ESD into their guidelines and mission statements, whereby two thirds think that only a few of their HE institutions address ESD. Partnerships and networks on ESD in HE at the national, regional as well as international level have been mentioned as important drivers for HE institutions to incorporate ESD and to foster PD opportunities for their university educators (UE4SD, 2014).

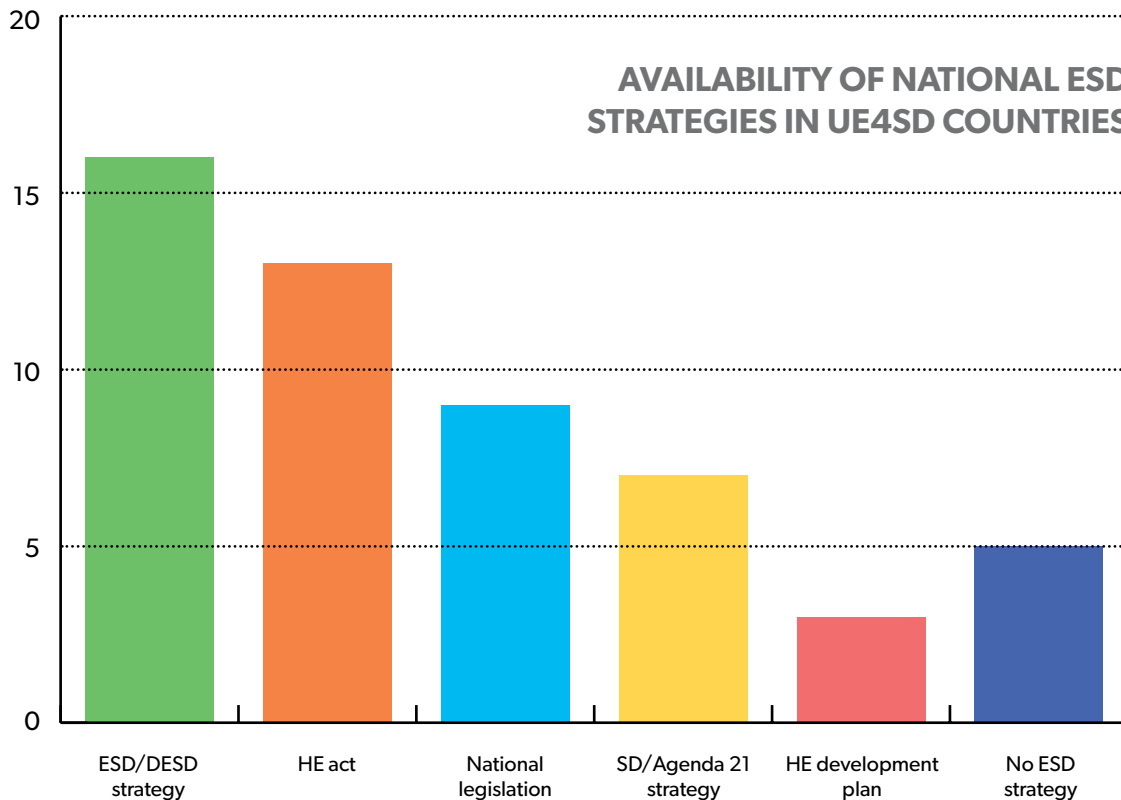


Figure 2.2 – Availability of national ESD strategies in UE4SD countries, in total numbers (from UE4SD, 2014).

Global ESD actions and strategies such as the UN Decade on ESD, the Global Action Programme or the UNECE Strategy on ESD have helped to shape ESD responses by higher education institutions, providing a policy framework which can guide the implementation of ESD in national and regional policies,

as well as in universities. As higher education institutions do not depend on national policies, being relatively autonomous in many areas of their operations, it is very important to hold discussions over educational theories, practices and initiatives which can support ESD transition at this level. Drawing on existing experiences, the chapters that follow aim to provide best practice examples of such activities.

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CHAPTER 3

PRINCIPLES

Teaching quality,
ESD approaches
and competence frameworks
for educators

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3/1 **Education for sustainable development**

Within intensive international debates at high-level educational fora (e.g. UNESCO, UNECE - cf. Delors et al., 1996) it has been agreed that education for the 21st century should follow societal goals and support individuals and communities in sustainable ways of living, decision-making and actions. The primary goals of Education for Sustainable Development (ESD) as they were consequently defined stress its humanistic orientation: the need to ensure human dignity in all aspects of life and to build respect for other cultures and next generations in a context specific way. To achieve this, new critical, futures-oriented and inclusive pedagogies should transform teaching and learning processes on all educational levels so that knowledge is developed and applied in an integrative way within a sustainability framework (Tilbury, 2011). This requires the devel-

opment and application of new educational principles based on active and participative approaches to learning and teaching, and consequently also complex transformation of educational systems as such: its policies and priorities, principles, curricula and learning processes (Ryan and Tilbury, 2013).

ESD definition and principles

There are many existing definitions of ESD; according to Waas et al. (2012), ESD is considered to be:

“...a transformative and reflective process that seeks to integrate values and perceptions of sustainability into not only education systems but one’s everyday personal and professional life; a means of empowering people with new knowledge and skills to help resolve common issues that challenge global society’s collective life now and in the future; a holistic approach to achieve economic and social justice and respect for all life; a means to improve the quality of basic education, to reorient existing educational programmes and to raise awareness...”

FUTURES THINKING	Futures thinking engages people in imagining preferred visions for the future. It engages people in meaningful understandings and interpretations of sustainable development and enables the exploration of people’s assumptions. This process of envisioning futures leads people to take ownership and responsibility for a sustainable future.
CRITICAL AND CREATIVE THINKING	Critical and creative thinking enables people to explore new ways of thinking and acting, make informed decisions, and create alternatives to present choices. It involves reflecting on how people interrelate with each other, understanding cultural differences and creating alternative ways to live together.
PARTICIPATION AND PARTICIPATORY LEARNING	The engagement of people is necessary in order to build a sustainable future together. Engaging diverse stakeholders and communities is essential, as they value and include differing knowledge systems and perspectives. The process of participation is also important to creating ownership and empowerment.
PARTNERSHIPS	Partnerships are a motivating force towards change. They empower people and groups to take action, take part in decision-making processes and build capacity in sustainable development.
SYSTEMIC THINKING	Thinking systemically is essential to sustainable development as piecemeal approaches have been proved not to work, resolving one issue while creating other problems. Sustainable development requires approaches that go beyond problem-solving and/or cause-effect.

Table 3.1 – Key ESD principles (from Tilbury and Mulà, 2009)

ESD APPROACHES AND PRINCIPLES THAT ARE PROMOTED WITHIN NATIONAL STRATEGIES

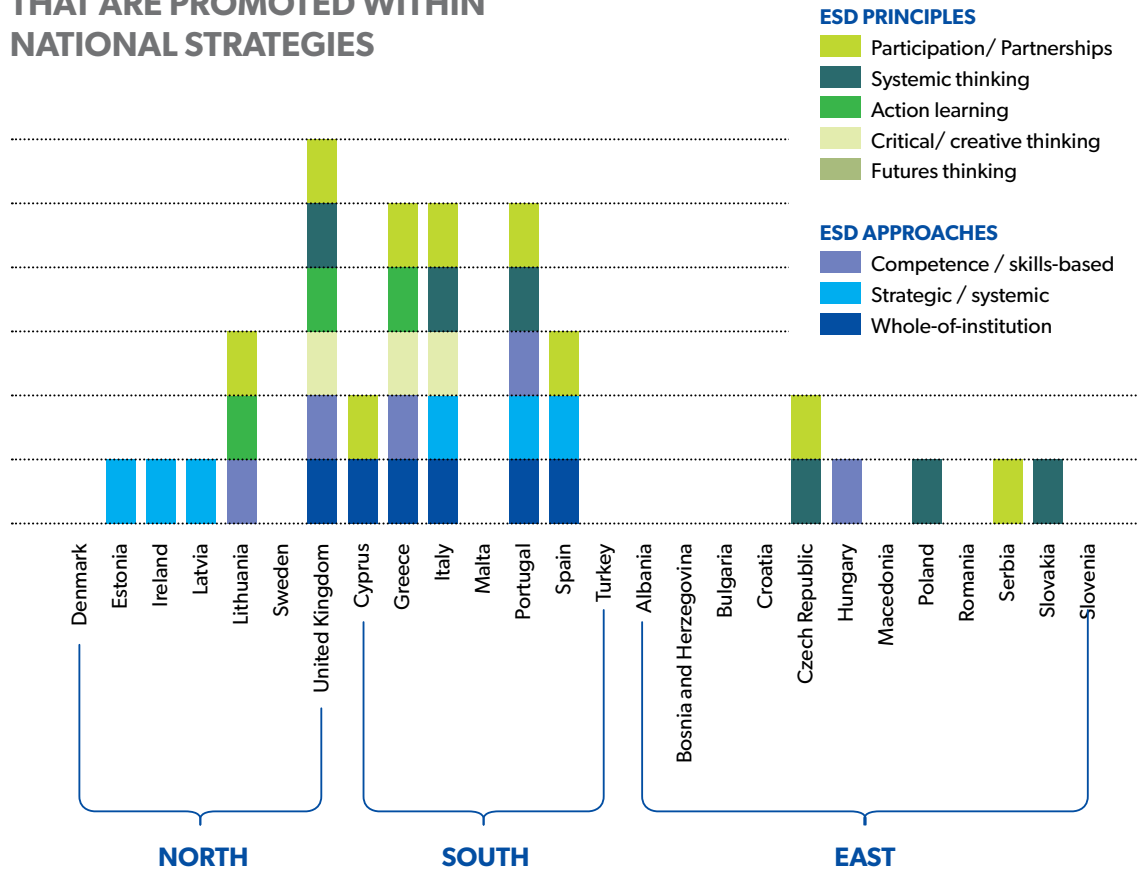


Figure 3.1 – Overview of ESD approaches and principles occurring in national ESD strategies in UE4SD partner countries; data for Region West not available, more information in the UE4SD State of the art report (from UE4SD, 2014)

The concepts or key words that appear in the definitions of ESD include (Wals, 2009):

“creation of awareness; local and global vision; responsibility; learning to change; participation; lifelong learning; critical thinking; systemic approach and understanding complexity; decision-making; interdisciplinarity; problem-solving; satisfying the needs of the present without compromising future generations”

The five internationally recognised ESD principles identified by Tilbury and Mulà (2009) are presented in **Table 3.1**.

The mapping exercise of the UE4SD project⁴ followed an agreed set of ESD principles and ESD approaches have been identified. **Figure 3.1** provides an overview of these ESD principles and approaches as they appear in

national ESD policy documents of European countries participating in the UE4SD project (see UE4SD, 2014: p. 16–17).

ESD competences

In recent debates, ESD is not considered to be only a process of “gaining knowledge, values and theories related to sustainable development” but it is associated with competences to ask “critical questions; envision more positive futures; clarify one’s own values; think systemically; respond through applied learning opportunities; and to explore the dialectic between tradition and innovation” (Tilbury, 2011, p. 8). This competence related innovation in teaching is highly valued in ESD. For good quality ESD, pedagogical concern is therefore in the centre of attention.

⁴) see Section 1.2 for more information on the stages of the UE4SD project

A good ESD educator at all levels not only knows his/her subject or discipline but is also able to transfer this knowledge and to use it in practice for desired (societally relevant) goals – so that the learner is able to take action based on the knowledge. An efficient ESD thus shifts the model of knowledge dissemination towards a more participatory one, where students' competences are developed in interaction with the educator: in discussions, engagement in real world situations, joint projects and activities. Competences are considered to be important learning outcomes, and are also constituent parts of educational methods designed to achieve ESD goals.

The competences combine the demand for *ability to act* (a desired educational goal) with the understanding of *why and how to act* so that crucial problems of today are addressed (desired societal goal). The competence concept is based on holistic and future oriented thinking; in practice it should underpin decision-making structures, especially competences such as: critical weighting of viewpoints and possibilities, clarification of values and commitment to engage and undertake risk. To address the need for competences and to establish adequate learning processes, educators need the ability to plan for innovations in their own teaching, to become self-directed teachers, able to set pedagogical goals related to SD and adjust their teaching accordingly. This moves ESD pedagogy to a new level – as opposed to traditional teaching where improved competences are typically expected to be acquired by students while educators only deliver knowledge.

UNECE competence framework

An UNECE expert group developed a framework for educators' competences with 4 learning domains according to the pillars of 21st century education (Delors et al., 1996), i.e. learning to know, learning to do, learning to live together, and learning to be, and with 3 dimensions, including holistic approach, envisioning change and achieving transformation (UNECE, 2011). The competence framework outlines the desired educational goals and processes from a theoretical point of view, which can then be used in practice: as a tool for *curricula planning* and overall reorganisation of university programs (relevant for university leaders); to assist in *course and study program designing* and *formative evaluation* of the teaching process (for teachers); and consequently to provide a framework for *reflection* of

ESD relevance (for external observers and/or research purposes). However its application still requires commitment of those involved on all educational levels.

In the mapping stage of the UE4SD project, this UNECE framework was used to identify whether the professional activities had a competence focus (see UE4SD, 2014: p. 25–26 and 48–53). It helped to assess the competence focus in examples of good practice (the matrix was part of the template for its description) and the selection of best practices from across Europe for this publication.

3|2

Specifics of HE pedagogies

On the higher education level, new teaching methods and approaches should address the need for a **holistic** perspective in implementing sustainable development (SD); as many authors argue, sustainability is still compartmentalised and hence interdisciplinary, multidisciplinary or rather **transdisciplinary** dialogue should be supported (Lozano et al., 2014). The narrow disciplinary orientation has often little relevance to the sustainability demands of society – hence calls for a more holistic approach were heard through the DESD (Sibbel, 2009; Sterling, Maxey and Luna, 2013).

ESD at all levels including HE is associated with innovation in pedagogical approaches (UNESCO, 2012). But up till now SD oriented curricular change which is anticipated on the HE level does not sufficiently pay attention to HE pedagogy and teaching (Ryan and Cotton, 2013).

While the DESD report (UNESCO, 2014) identified a number of existing professional development programs for HE teaching staff, few of these experiences brought deep change and real innovation from the methodological point of view. Moreover these experiences are often not systemically reflected and sufficiently documented in the literature (cf. Tilbury, 2011). Due to this fact such innovations are often perceived as risky – although risk-taking is considered to be beneficial for curriculum innovation and quality enhancement:

“Almost all institutions are agreed that the encouragement of innovation is at the heart of enhancement, that innovation thrives when risks can be taken and that innovation, risk and enhancement are therefore intimately bound together.” (HEA, 2008, p. 31)

Quality teaching at HE level and relationship with ESD

ESD due to its progressive and innovative nature is considered to be a strategic concern for educational quality. It “challenges Higher Education in many respects, seeking to improve the curriculum in line with educational and societal triggers, for example to enhance the professional profiles of graduates or to extend the credentials of universities in responding to industry needs or civic concerns” (UoG, 2012). Trying to address fundamental questions about the overall purpose and direction of the education system, ESD draws on theories of learning and recognises the change management issues at stake. ESD principles which infuse teaching and learning practice across the HE curriculum have a transformative impact on the learners, teaching/learning processes, institutions and policies (Ryan and Tilbury, 2013). ESD due to its transformative nature can serve as a turning point for “quality” in HE and vice versa. Consequently, even if quality and ESD discourse have different origins, the ways they engage with the HE sector, intentions and aims, both have several common aspects as seen in **Box 3.1**.

Combining the two discourses is an opportunity for both areas. As Mader (2014, p. 67) points out, to achieve their transformative function universities “need to have in place a robust, proven quality management system that responds to social, economic and environmental challenges”. Recent discussions prove that assurance systems and activities are often overwhelmed by standards and procedures while they lack clear purpose which the reference for sustainability could provide (Vettori and Rammel, 2014).

In some cases, the combination of ESD and quality is implemented by universities, including ESD competences in the design of all their courses. As the courses have to be evaluated by the quality assurance agencies, they can check if these competences are well included and can be implemented in supportive conditions. This can be seen as a first step and some countries such as Australia have designed basic standards of ESD competences to be included in all their courses (see e.g. an initiative of the University of Newcastle at <http://environmentltas.gradschool.edu.au/>)

Box 3.1

CONVERGENCE OF QUALITY DISCOURSE & POLICY WITH ESD PRINCIPLES (from UoG, 2012).

The principles of quality and ESD are both:

- **systemic in reach** – their approaches and principles are intended to inform learning and teaching across all subject areas and all types of course offered in Higher Education
- concerned with **the purpose of Higher Education** – they see the need to understand its current trajectory and to ensure that the core HE ethos is reflected in curriculum practice
- concerned with **the nature of learning** – they are guided by the existing body of scholarship about educational practice and pedagogy across all settings and subjects
- concerned with **the value of learning** – with the relevance and usefulness of the curriculum and ensuring that it has the greatest benefit for individuals and societies
- **dynamic and developmental** fields – they take shape in the broader currents of educational thinking and societal forces, both influenced by them and influencing them

In spite of this, only a few initiatives worldwide have considered the implications of ESD as “an overarching quality agenda” for the curriculum. Even if some publications pay attention to these questions, the interest in the HE area to combine both approaches is still relatively small. In general, universities do not fully understand the potential of ESD for their contribution, role and position in the future HE system (UoG, 2012).

ESD and professional development in European HE

Focusing on the professional development of university educators is an established way to enhance and ensure quality of HE teaching. An overview of ESD professional development opportunities and existing policies and

strategies in European countries has shown that only a few countries from the UE4SD partnership have comprehensive and mandatory programmes for university educators to acquire teaching competences, which would present a favourable context for integrating ESD aspects into professional development programmes (UE4SD, 2014). On the contrary, in most countries there are no professional requirements for university educators. As a result it is up to the interest and conviction of the individual educator if she/he will attend professional development opportunities in ESD. This in turn means that both leadership and personal commitment are required for creating good practices and inspiring other educators to professionally develop their ESD competences (UE4SD, 2014).

National or regional initiatives on ESD professional development opportunities for university educators are relatively limited. From 33 UE4SD countries, only seven outlined national ESD initiatives fostering professional development. From the East region four countries (Albania, Czech Republic, Macedonia, Slovakia) report about ESD professional development, but mainly focusing on curricular change towards ESD or raising awareness for the need for professional development opportunities. Two cases from the South region (Greece and Spain) refer to declarations by the national conferences of rectors encouraging activities to improve the ESD competences of university educators, whereby the Charter of Greek universities for SD explicitly calls for a whole of institution approach that integrates ESD professional development of university educators. From the West region only one country (Belgium) explicitly emphasises ESD professional development initiatives for university educators at the provincial level of Flanders. From the North region (UK) comes an interesting example of embedding ESD into in-house academic staff training and induction sessions and the development of frameworks and guidelines to improve understanding of ESD and its pedagogies (UE4SD, 2014).

With regard to *ESD as a part of quality assurance of higher education institutions*, no UE4SD partner country from the South and the East regions reports that ESD is included in such a system. Three countries from the North region have taken some initial steps in this area and the United Kingdom is the only example where ESD is referenced in national quality frameworks that concern all universities.

Three countries from the West region (Belgium, the Netherlands and Switzerland) refer to ESD in their quality management (UE4SD, 2014).

Related to the integration of *ESD in the national accreditation frameworks*, partners report that in one country it is a requirement, while in two countries HEIs are not required but have the opportunity to report on sustainable HE in the national accreditation framework, by using the Auditing Instrument for Sustainability in Higher Education (AISHE). In another country ESD is not explicitly addressed in the national evaluation framework but building student capabilities is being emphasised (UE4SD, 2014).

In conclusion, it is visible that only a few countries have significant programmes oriented on ESD professional development – United Kingdom is an outstanding example – and in many countries little attention is being paid to the ESD professionalization of university educators (UE4SD, 2014). This publication selected the most outstanding examples of good practice professional development activities with the aim to highlight quality principles of ESD pedagogy.

315 Summary

Quality enhancement issues on the HE level should pay attention to teaching/learning processes and approaches besides questions of educational content and scientific methods, especially with regard to quality assurance and professional development of university educators. As ESD brings pedagogical innovation to HE teaching, ESD related criteria should be included in the guiding principles for professional development of educators and quality indicators of PD. Principles of “good” (ESD relevant) teaching outlined for quality enhancement should be used for quality assessment.

Due to its innovative character, competence related quality criteria are non-existent on the HE level, even though being intensely discussed at different forums. Examples of good practices collated in this publication may support concerns and initial ideas for their formulation.

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CHAPTER 4

EXAMPLES

Leading practices
of university educators'
professional development
in ESD

Authors:

Kapitulčinová, D., Dlouhá, J., Barton, A., Ryan, A., Mader, M., Mulà, I.

(case studies in this chapter have additional specific authors)

This chapter presents 13 best practice examples reported from 10 European countries, including initiatives spanning the four UE4SD regions – North, South, East and West – as well as further afield. The selection presented here aims to provide an overview of the wide range of the current best practices in ESD professional development of university educators in Europe and to inspire further developments in this area.

4|1 How were the best practice examples selected and developed?

Background and selection of examples

The best practice examples in this publication have been selected from a number of good practices identified during the UE4SD mapping stage and listed in the four regional reports (see Further Readings below). Brief descriptions of the good practices have then been presented in the State of the Art report for the entire European area (UE4SD, 2014).

Based on this broad overview on the state of professional development of university educators on ESD in Europe, a number of leading examples have been identified by the UE4SD Steering Group to be developed as ‘case studies’ and showcased in this publication⁵.

The key selection criteria were based on the following 3 questions:

- What is the **approach to ESD** and ESD models that inform it? Is it clearly ESD and not just SD?
- Is there a clear **professional development process**? Is it established with some outcomes already?
- How **practical** is this? Is it an approach that can be adapted or used by other universities or networks?

In addition to these key criteria, balance across regions and the geographical scope

of the initiatives was an important selection factor. This publication therefore contains case studies from all four European regions – North, South, East and West – as well as initiatives with key activities focused on the international, national and institutional level.

‘Large’ and ‘small’ case studies

Nine ‘large’ and four ‘small’ case studies can be found in the sections that follow. The ‘large’ case studies represent the initial selection of best practices that have been described in great depth (typically within about seven pages). Due to a number of very good examples identified, four ‘small’ case studies have been added to the selection and have been described more briefly (within 3-5 pages). ‘Large’ and ‘small’ therefore refers to the overall length and depth of the case studies described in this publication.

Leading Practice Publication development

After the final selection of the 13 case studies, the authors (UE4SD partners as well as external contributors) worked with their respective regional coordinators to prepare the texts, diagrams and images according to a given outline. Our approach to developing the case studies and preparing this publication was based on using a unified template to capture the key essence of the initiatives from the culturally diverse regions. We aimed to collate ideas and experiences that could serve as an overview and inspiration to various actors in European Higher Education as well as beyond.

4|2 Overview of best practice examples in this publication

An overview of the various case studies contained in this publication is shown in **Figure 4.1**. Full descriptions of the individual case studies including diagrams, photos and further readings are presented in the sub-chapters that follow.

⁵) Please note that the presented collection of examples is by no means exhaustive. We do hope, however, that we have covered a good proportion of the current leading efforts on ESD professional development in European Higher Education in this publication.

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Further readings

UE4SD Regional Reports:

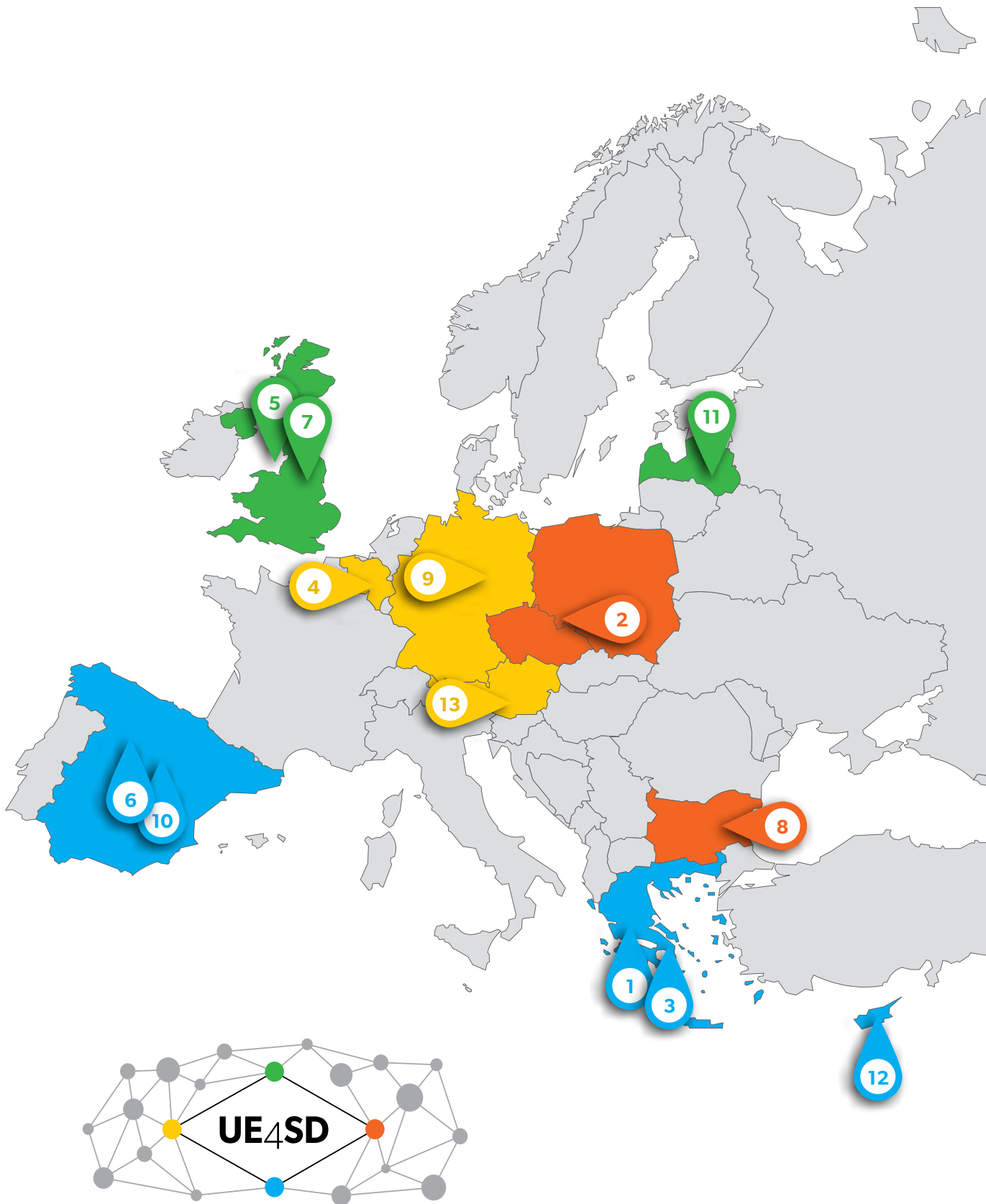
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Next page:

**Overview of best practice examples
contained in this publication**

Overview of best practice examples contained in this publication:

<p>2</p> <p>Short name: ENOAT Type: Workshops/Network Scope: International Focus: Workshops on innovative teaching methods held by the ENOAT network of university teachers in organic agriculture. Country reporting: Czechia/Poland/International <i>see page 49–55</i></p>	<p>3</p> <p>Short name: RUCAS Type: Project/Network Scope: International Focus: EU project that established a consortium of 12 universities and three NGOs to support ESD and capacity building development in European HEIs, as well as those in Egypt, Jordan and Lebanon. Country reporting: Greece <i>see page 56–61</i></p>	<p>1</p> <p>Short name: MedUnNET Type: Network Scope: International Focus: Network promoting ESD in university programmes, departments and facilities of the Mediterranean region. Country reporting: Greece <i>see page 42–48</i></p>
<p>5</p> <p>Short name: Green Academy Type: National programme Scope: National Focus: Change programme bringing together staff teams from different universities to plan, develop and implement ESD institution-wide change initiatives. Country reporting: UK <i>see page 69–74</i></p>	<p>6</p> <p>Short name: CADEP-CRUE Type: Network Scope: National Focus: Network supporting curriculum development processes and innovative teaching projects for sustainability skills development. Country reporting: Spain <i>see page 75–81</i></p>	<p>4</p> <p>Short name: Ecocampus Type: National programme/Learning networks/ Scope: National Focus: Programme helping HEIs to structurally embed (E)SD in their mission statements, curricula and competence profiles. Country reporting: Belgium <i>see page 62–68</i></p>
<p>8</p> <p>Short name: ISDE Type: Network Scope: Institutional Focus: Informal teachers' network providing mutual support for university teachers in educating students and self-educating themselves in the (E)SD field. Country reporting: Bulgaria <i>see page 88–94</i></p>	<p>7</p> <p>Short name: Learning for Sustainable Futures Type: Institutional programme Scope: Institutional Focus: Programme providing professional development in ESD for both teaching staff and staff who support student learning. Country reporting: UK <i>see page 82–87</i></p>	<p>9</p> <p>Short name: Leuphana Semester Type: Workshop Scope: Institutional Focus: A three-day workshop for lecturers held once a year to help prepare teaching staff for ESD challenges. Country reporting: Germany <i>see page 95–100</i></p>
<p>11</p> <p>Short name: ISE action research Type: Educational approach Scope: Institutional Focus: Development of theoretical foundations and practical experience in action research for reforming teacher training towards ESD. Country reporting: Latvia <i>see page 105–107</i></p>	<p>10</p> <p>Short name: Innovation Projects for Sustainability Type: Grant scheme Scope: Institutional Focus: Grant scheme for developing the capacity of people for transforming educational change for sustainability via practical projects. Country reporting: Spain <i>see page 101–104</i></p>	<p>12</p> <p>Short name: INDUCTION Type: Induction programme Scope: Institutional Focus: Induction programme for novice teachers as part of ESD in relation to quality education, systemic and critical thinking, and use of variety of teaching techniques. Country reporting: Cyprus <i>see page 108–113</i></p>
		<p>13</p> <p>Short name: BINE Type: University course Scope: National Focus: Professional development course on innovation in teaching and ESD for higher education teachers. Country reporting: Austria <i>see page 114–119</i></p>



UNIVERSITY EDUCATORS
FOR SUSTAINABLE DEVELOPMENT

Figure 4.1 – Overview of the best practice examples contained in this publication; numbered markers show the reporting country only (the scope of partners and activities is in many cases wider), colour represents the region of the reporting country:
 ● = North, ● = South, ● = East, ● = West

1 / MedUnNET: MEDITERRANEAN PROFESSIONAL DEVELOPMENT NETWORK FOR ESD

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United Nations
Educational, Scientific and
Cultural Organization



UNESCO Chair on
Sustainable Development Management
and Education in the Mediterranean
HELLENIC REPUBLIC
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1 OVERVIEW

The Network of the Mediterranean Universities for Sustainable Development focusing on Education for Sustainable Development (MedUnNET) was established in order to promote aspects of sustainable development and Education for Sustainable Development (ESD) in university programmes, departments and facilities of the Mediterranean region. It was officially launched in Athens in November 2008 under the auspices of the Vice Rector of the University of Athens. The National and Kapodistrian University of Athens holding the UNESCO Chair on Sustainable Development Management and Education in the Mediterranean is the Coordinator of the Network, and also provides the Scientific Secretariat. The Mediterranean Information Office for Environment, Culture and Sustainable Development ([MIO-ECSDE](#)) through the Mediterranean Education Initiative for Environment and Sustainability Network ([MEdIES](#)) has been entrusted with the Administrative Secretariat of MedUnNET (see the diagram in Fig. 4.2

for overview of the networks). MedUnNET engages a core of 20 member Universities from 15 Mediterranean countries. Eighteen partners have signed the Memorandum of Understanding (see Box 4.1).

The Network is commissioned with facilitating the integration of sustainable development aspects in the Mediterranean universities. More specifically, the MedUnNET is aimed at:

- developing the competences of university staff regarding ESD.
- promoting a Whole of Institute Approach in the Higher Education Institutes of the region.
- providing a forum for consultation on ESD among universities and key-stakeholders (society, NGOs, decision makers, media, etc.)
- synergising the individual activities for the benefit of ESD in the region.

An important goal of the Network is the creation of a joint Mediterranean Master Course in ESD.

Box 4.1 - Members of MedUnNET (have signed the MoU)

- Agricultural University of Athens (Greece)
- La Sagesse University (Lebanon)
- National and Kapodistrian University of Athens (Greece)
- Panteion University of Social and Political Sciences (Greece)
- Technical University of Catalonia (Spain)
- University of Agriculture of Tirana (Albania)
- University of Bogazici (Turkey)
- University of Bordeaux (France)
- University of Cairo (Egypt)
- University of Crete (Greece)
- University of Cyprus (Cyprus)
- University of Mohamed V Souissi (Morocco)
- University of Padova (Italy)
- University of Primorska (Slovenia)
- University of Sarajevo (Bosnia and Herzegovina)
- University of Tunis (Tunisia)
- University of Zagreb (Croatia)
- University of Peloponnesus (Greece)

2 PROFESSIONAL DEVELOPMENT PROCESS

How the process works:

MedUnNET promotes ESD concepts, content and methodology in university learning and teaching, and enhances the role of the university as a driver of sustainable development in the Mediterranean Region. Furthermore, the Network focuses on developing the competences of university staff in applying ESD in courses, programmes and projects. Thus, one of its priorities is the organisation of respective training events (seminars, workshops, summer schools, etc.). University staff are trained by international experts in the background, principles and the pedagogies of ESD; they gain insights into the theoretical and practical foundations of ESD in higher education; they are introduced to the concept of the sustainable university and the “whole of institute approach” and its requirements; and academic staff share their experience and successful practices in the field of ESD. Since 2008, approx. 500 university professors from various countries of the Mediterranean have been trained (Uppsala, 2008; Amfissa,

2010; Athens, 2011; Rabat, 2013; Amfissa, 2014; etc.). MedUnNET as an integral part of the UNESCO Network and Chair of ESD in the Mediterranean has contributed to the development, drafting and finalisation of the Mediterranean Strategy for ESD which provides for the systematic development of ESD competences of Mediterranean educators.

The ESD training of university staff follows adult learning methodology in terms of:

- Combination of a theoretical (approx. 35% of duration) with an experiential part: workshops, work in groups, etc. (approx. 75%).
- A specific number of participants (in order to ensure the experiential nature of the training): usually no more than 45 trainees.
- Two trainers actively involved in each training session.
- Each training session lasts a maximum of 90min, which is organised as follows:
 - (i) *Initial presentation/discussion/question to trigger trainees' ideas on the subject*

- (ii) *Experiential activity on a given question/subject : in pairs and/or groups to discuss, read, elaborate, observe, etc. and then present their outcomes/findings in the plenary*
- (iii) *Theoretical presentation of the training subject also combining the participants' experience and ideas*
- (iv) *Suggestions for follow up in order for trainees to integrate their new "knowledge" and experience within their work.*

MedUnNET as an integral part of the UNESCO Network and Chair of ESD in the Mediterranean has contributed to the development, drafting and finalisation of the Mediterranean Strategy for ESD which provides for the systematic development of ESD competences of Mediterranean educators.

Regional networks that support the process:

The Network brings together educators from higher education institutions of the North and the South of the Mediterranean to share experiences and good practices on ESD

- ▼ Snapshot from the training event: *Revisiting University Curricula: are the H2020 priority areas appropriately reflected? (Athens, 2011)*



at the tertiary level. This is done by serving as a communication platform for the universities to “interact” systematically with other partners such as:

- *educators of all levels of formal but also non-formal and informal education through the MEdIES Network that currently has approx. 4000 members;*
- *NGOs/CSOs, through the hundreds of members and associates of MIO-ECSDE;*
- *decision-makers, through the Circle of Mediterranean Parliamentarians for Sustainable Development (COMPSUD);*
- *the media, through the Circle of Mediterranean Journalists for Sustainable Development (COMJESD), etc.*

In addition, the Network is a registered member of the Euro-Mediterranean University (EMUNI).

3 ESD FRAMING

The Network through its capacity building activities focuses on developing the ESD competences of university educators (as identified by the UNECE Expert Group on ESD Competences), particularly:

- A holistic approach** in the professors’ teaching approaches, integrating natural, social and economic parameters in their courses; connecting the learners to their local and global spheres of influence; highlighting various stakeholders across places and disciplines.
- Envisioning change** from unsustainable practices towards advancing quality of life, equity, solidarity, and environmental sustainability, starting from their own institute; motivating the students to make a positive contribution to their social and natural environment, etc.
- Transformative pedagogy** starting with the professor him/herself being a facilitator and active participant in the learning process, applying learner-centred teaching methods, developing critical thinking and active citizenship and assessing the learning outcomes in terms of changes and achievements in relation to sustainable development.

4 KEY QUESTIONS

The key issues and challenges that MedUnNET addresses are the following:

Q: How to increase the competences of educators for the effective delivery of ESD?

Q: How to promote ESD and the Whole of Institute Approach in universities and departments with diverse backgrounds or even no previous experience in ESD?

Q: How to enforce ESD institutionally with only a modest investment of resources?

Q: How to mainstream ESD into education and sustainable development policies to create an enabling environment for ESD and to bring about systemic change?

Q: How to best promote closer synergies between formal, non-formal and informal ESD and among Mediterranean countries, especially under current socio-political conditions, the “Arab spring” in the South and the economic crisis on the Northern shores of the region.

5 PRACTICALITY

The key lessons learned from the operations of the MedUnNET up till now are:

- The network scheme & financing: Membership is open to any interested higher education institute that is internationally accredited and in agreement with the Network’s MoU (which should be signed by its Rector/President and the Rector of the UoA on behalf of the Network); it is thus easy to become a member, with no registration fee to date. Initially, membership was restricted, for practical reasons, to a relatively few universities who have signed a formal MoU because the principle idea was the organisation of a post-graduate course on the basis of the high mobility of a core group of professors. This scheme has proven to be very expensive and difficult to finance, so the module was changed. Still, restrictions in funding is an obstacle. This was partly addressed through Summer Post-Graduate Schools providing credits (ECTS) to the existing post-graduate courses of the participating universities.
- Communicating about the MedUnNET and its activities with external partners helps to build interest and critical support for ESD at the strategic level.

DIAGRAM

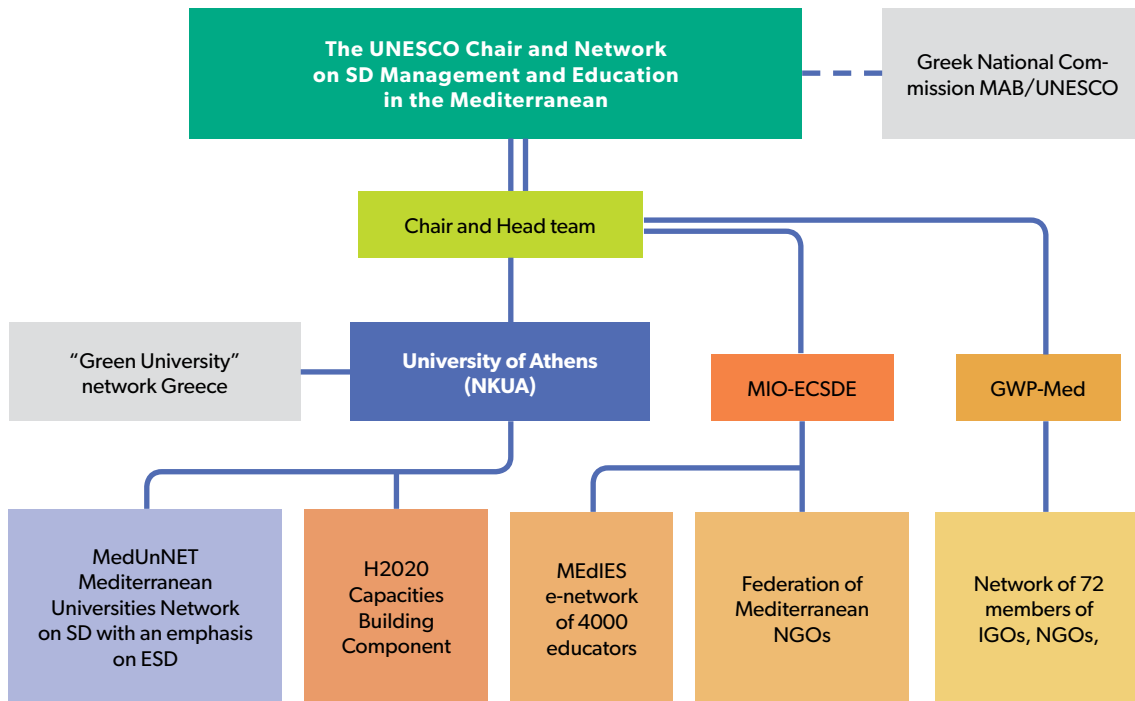


Figure 4.2 – Visual diagram showing how the the MedUnNET Network is attached & linked with the activities of its major partners; MIO-ECSDE: Mediterranean Information Office for Environment, Culture and Sustainable Development (NGO Federation), GWP-Med: Global Water Partnership- Mediterranean, H2020: “Horizon 2020” (an EU Programme to de-pollute the Mediterranean by 2020), MEdIES: the Mediterranean Education Initiative for Environment & Sustainability

- Following up with trainees and universities at regular intervals helps to keep their interest to ensure stronger networking and capacity building outcomes.
- Several universities asked for the expansion of the thematic areas of the MedUnNET training activities to cover competences for overall sustainable development issues. In particular, water was suggested as an area for the potential development of common activities.

Agence Universitaire de la Francophonie (of the Union for the Mediterranean):

“I acknowledge all the effort of establishing such a Network and I express the commitment of promoting the MedUnNET from its very beginning”.

The Recommendations of the International Conference “Working together on Education for Sustainable Development” (Bordeaux, 27-29, October 2008) stated that:

“The Network of Mediterranean Universities for ESD must be encouraged and supported in its role as a change incubator in all the Mediterranean countries”.

6 REFLECTIONS OF ORGANISERS AND FACILITATORS

During the Official Launch Event of the Network (Athens, November 2008) Ms Michele Gendreau - Massaloux, Rector of the

The Rectorate of the University of Athens has repeatedly confirmed in various meetings its strong commitment to supporting the initiative (by hosting the Scientific Secretariat of the MedUnNET).

The President of the Université Mohammed V Souissi, Prof. Radouane Mrabet, who was co-organiser of the Network's training course *"Education en vue du Développement Durable (EDD) dans l'Université: Théorie et Pratique (April 2013, Rabat, Morocco)"* stated that:

"The training course was particularly important and aspiring for the Moroccan Higher Educational Community to reform and change its curriculum towards sustainability".

After all, MedUnNET was "born" at the beginning of the UN Decade on ESD, and has a "pioneering" role in the developments of ESD in the Higher Educational Community of the Mediterranean. Among others, MedUnNET has been included in the Final Report of the UN Decade on ESD (UNESCO, 2014) as:

"Network of higher education institutions that build capacity and expand influence on ESD worldwide"... "it has now become identifiable force of influence in its respective region."

7 REFLECTIONS OF PARTICIPANTS

The university staff who participated in the network's training events have generally assessed the capacity building processes very positively, and have also provided significant feedback and input for follow up activities.

Some indicative quotes follow from trainees that have benefited from MedUnNET training and who found it valuable for their professional development and work at other institutions:

"I feel more competent on integrating ESD in university processes, curricula and activities"; "I was given the opportunity to share experiences of university ESD practices and explore the possibilities of networking" (Amfissa, 2010).

"I feel that because I followed this course I have been positively stimulated to 'revisit' my university curriculum towards ESD" (Athens, 2011).

▼ Snapshot from the Residential Seminar on Universities and ESD (Amfissa, 2010)



“Through this course, I have been positively motivated to take initiative on ESD within my teaching work”; “I have now a better understanding of the whole institute approach in the university” (Rabat, 2014).

“I feel like I gained an insight on the aspects of integrating ESD when it comes to the policy area” (Zagreb, 2014).

8 OUTCOMES

Up till now, MedUnNET, which is an associated Network of the UNESCO Chair on Sustainable Development Management and Education in the Mediterranean, has successfully managed to:

- I. Develop an outline for a Mediterranean Master’s Curriculum on ESD.
- II. Organise several capacity building activities for SD and ESD training for approx. 500 university staff from the Mediterranean (most of the seminars were financially supported by the [Horizon 2020 Programme](#)). The evaluation of the majority of these capacity building activities and training have provided very positive results in the professional development of the trainees in terms of (i) development of competences in ESD (ii) enhancement of capacity in integrating ESD in university curricula and activities (iii) motivation to undertake ESD initiatives (iv) an increased understanding of the whole institute approach (v) acquisition of insights into integrating ESD within the policy area.
- III. Organise a Post Graduate [Summer School on ESD in Biosphere Reserves](#) (Greece, 2014).
- IV. Facilitate the establishment of a Greek University Network “Green University” and sign the respective [Charter of the Greek Universities for Sustainable Development](#) (2011).
- V. Systematically promote ESD policies in the region, providing, *inter alia*, technical and scientific support in the drafting process of the [Mediterranean Strategy for ESD](#) (endorsed by the UfM Ministers of the Environment in May 2014). In this line, it is mandated, together with MIO-ECSDE/MEdIES, to develop, under the political guidance of the UfM Secretariat, an Action Plan for the implementation of the Strategy.

Further information:

Further information about the Network at: <http://www.chem.uoa.gr/personel/Laboratories/EnvironChem/cvs/Scoulllos.htm>



<http://www.medies.net/staticpages.asp?aID=496>



Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



2/ ENOAT: Professional development workshops of the European Network of Organic Agriculture University Teachers

AUTHORS

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1 OVERVIEW

The *European Network of Organic Agriculture University Teachers* (ENOAT) is an international network of university teachers striving to promote innovative agricultural learning methods, support international collaboration, and increase teaching quality in the field of organic agriculture and agroecology among EU member states. Curricu-

lar change and teacher competences have been identified as ENOAT's key focus areas helping with the transition towards new approaches in practicing and teaching organic agriculture.

To achieve its aims, the network members are involved in numerous joint projects, organising annual meetings, workshops and summer courses rotating among the network partners, and developing a joint offer of courses for the institutions involved. Acquired skills and experiences are consequently disseminated through national networks of the member institutions.

The network has been cooperating since 1998 and it is a successor of the former curriculum development group on Plant Sciences as part of an Erasmus project which resulted in the implementation of a number of novel undergraduate and graduate-level organic agriculture courses and programmes in Europe. In 2001 ENOAT became an institutionalised group which currently comprises 26 Universities in 24 European countries (See Box 4.2). Its mission is among other to share experiences from countries where academic teachers have focused on participatory processes with colleagues in countries with less experience of how to implement innovative teaching methods into their curricula.

This case study specifically focuses on the professional development and teaching quality enhancement activities provided by the network to its members. Activities have included an annual three-day seminar on teaching methodology for about 30 participants and the consequent reflection and evaluation by the workshop facilitator (report and scientific articles – see References and Additional readings). The initiative is funded from the projects undertaken by the network or its individual members and is commonly part of annual project meetings.

Box 4.2 – Members of the ENOAT Network (see also Figure 1)

1. University of Kassel (Germany)
2. Università della Tuscia (Italy)
3. University of Copenhagen (Denmark)
4. University of Helsinki (Finland)
5. FESIA – ISARA (France)
6. Wageningen University (the Netherlands)
7. Swedish University of Agricultural Sciences (Sweden)
8. Norwegian University of Life Sciences (Norway)
9. Warsaw University of Life Sciences (Poland)
10. University of the Azores (Portugal)
11. University of Maribor (Slovenia)
12. University of Natural Resources and Applied Life Sciences, Vienna (BOKU, Austria)
13. University of South Bohemia (Czech Republic)
14. Corvinus University of Budapest (Hungary)
15. Estonian University of Life Sciences (Estonia)
16. Technical University of Madrid (Spain)
17. Latvia University of Agriculture (Latvia)
18. Aleksandras Stulginskis University (Lithuania)
19. Slovak University of Agriculture in Nitra (Slovakia)
20. University of Hohenheim (Germany)
21. University of Gastronomic Sciences (Italy)
22. Ege University (Turkey)
23. Agrarian University – Plovdiv (Bulgaria)
24. University of Zagreb (Croatia)
25. University of Novi Sad (Serbia)
26. University of Prishtina (Kosovo)

2 PROFESSIONAL DEVELOPMENT PROCESS

The main focus of the ENOAT network has been evolving over the years of its existence. Initially, the key task of ENOAT was to organize inter-university exchange of students and staff members, to develop and coordinate courses in organic agriculture, to organize annual meetings, and to manage

DIAGRAM

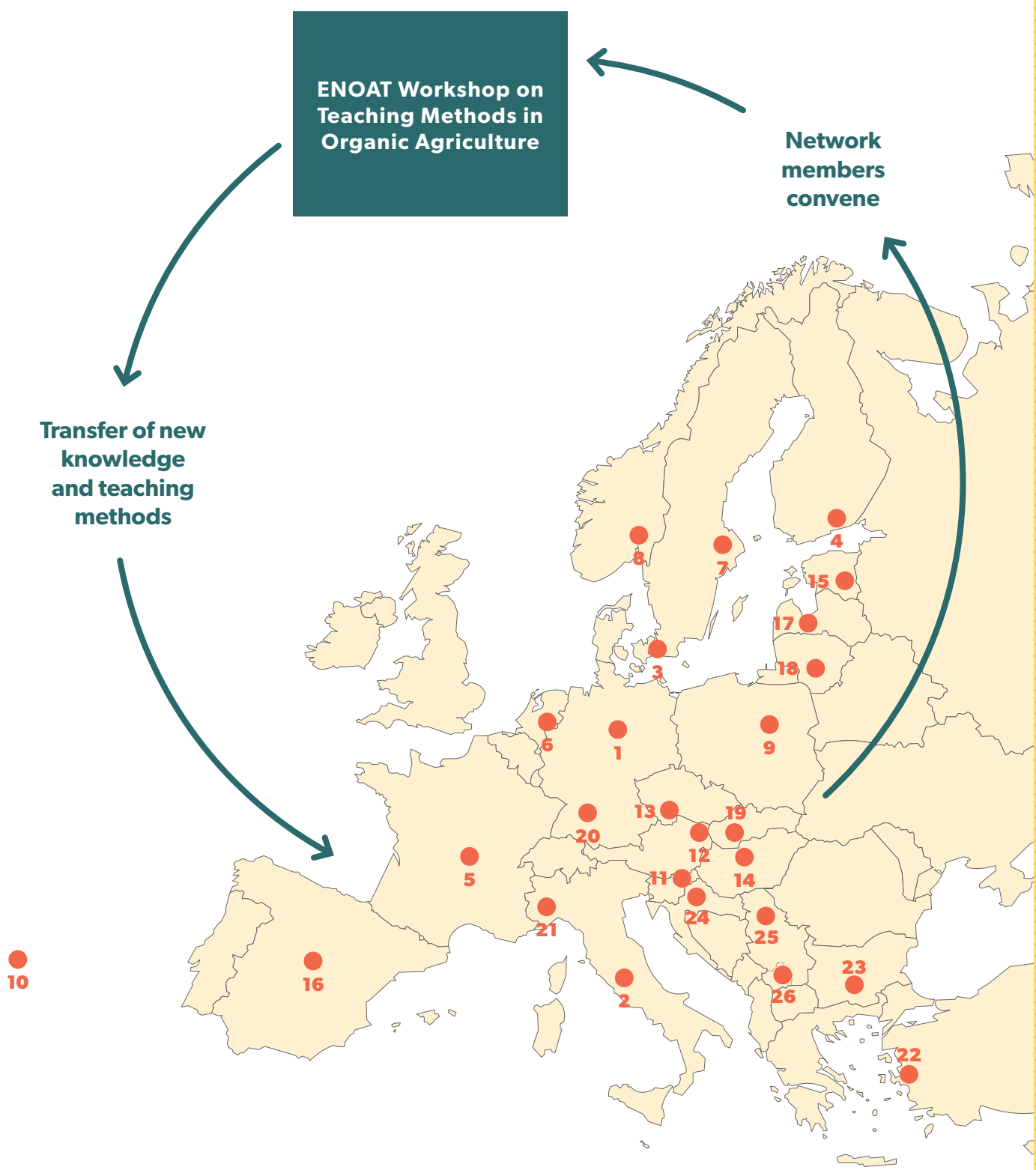


Figure 4.3 – The professional development process of the ‘ENOAT teaching methods workshops’ based on knowledge sharing and collaborative practices. Numbers refer to institutions in Box 4.2.

workshops on teaching methods¹. With the expansion of the EU, a specific main concern has become the dissemination of organic agriculture as a relevant topic for teaching and research in new member states. This has been achieved by arranging several annual meetings at East European universities, running summer courses in the new member countries and applying for common EU projects. The field of agroecology has been added more recently to expand the focus of ENOAT. The current network's activities are historically a consequence of the members' identified need to transform curricula and teaching approaches in organic agriculture.

Although there is no duty or top-down enforced policy to transform curricula and teaching approaches, the initiative has been taken by individual ENOAT members to disseminate and implement learning methods for organic agriculture practices together with building necessary competences to teach these practices. This has led to the development of workshops on teaching methods (typically held during the network's annual meetings) which are described in this case study. The process behind this professional development initiative is based on knowledge sharing and collaboration of the network members, and transfer of concepts, knowledge and skills back to their home institutions as shown in **Figure 4.3**.

3 ESD FRAMING

ENOAT's workshops on teaching methods have been designed and practiced to introduce innovative methods of teaching relevant for the field of agroecology. One of the key aims of the initiative is to increase the competencies of university educators to actively shape their teaching process and support their students in incorporating SD relevant approaches (agroecology) in their future practice (organic farming) which can support environmentally friendly development in rural areas. This approach is in line with the concept of Education for Sustainable Development (ESD). The learning process within the annual workshop is usually facilitated by mediators; the pedagogical methods include participatory learning, team and group work,

world café, and linking research and teaching. Each workshop is focused on specific teaching methods and strives to develop relevant skills.

The 2007 theme of the workshop held in Italy was *Research - teaching integration in agroecology and organic farming*. Connections between research and teaching were explored in a participatory learning process; workshop attendees formulated research and teaching principles and consequently also a vision of the learning environment that included integration of specific activities in research and teaching. It was concluded that teaching and research integration is especially important in organic farming and agroecology due to the high complexity of the field and the critical links with farming and food systems. As Lieblein et al. (2007) concluded, "understanding [such a] system requires a transdisciplinary strategy for education that involves experiential learning ...[as it is]... essential to tie learning to real world challenges and clients." Integrating field research and learning activities in the classroom supports a dynamic learning environment where students are encouraged to deal with complexity and uncertainty: they "explore the unknown, apply ... new knowledge and experiences to real world situations where answers may not be known" (ibid). What is shared by the research and teaching domains is the process of learning, where an interactive environment with high commitment of those involved is supported; explicit attention is paid to past experiences, context, and future situations (ibid).

In 2012 during the workshop organized by FESIA - ISARA (France) a three-step process was introduced to explore the key question: *What will the change to participatory learning mean for us as instructors?* The first step was for individuals to spend five minutes writing their own perceptions of what modifications to their teaching methods or overall attitudes toward education and their roles as instructors would be required. They were urged to reflect over the importance they see in this method of education, why they became involved in education to start with, and what changes would seem essential to the introduction of new methods and content into current courses in agroecology. The second step was to discuss in small groups of four

¹ Curriculum development for organic agriculture was the initial point of an Erasmus group of 7 universities from 1995 till 1998

people the individual changes written down in the first step. The groups were instructed to share, avoid judgment to the extent possible, and to each choose three of the most important changes in teaching to be shared in plenary session with the entire group. The third step was a general session where people at each table reported on their findings, and these were recorded on a white board in a mind map of the group's ideas. The elements of the summary mind map were later rearranged to more logically represent the responses by the small groups and to put more thought into the relationships among the ideas. One outcome was a summary paper submitted for publication [NACTA Journal] and more importantly the participants returned to their universities with some key practical ideas to implement in their courses in organic agriculture and agroecology.

As effectiveness of education on practical challenges in farming is best accomplished with involvement of stakeholders, real world experiences are also stressed. Connecting students with professionals through study visits, on-farm case studies, or inviting professionals to the regular course classes can raise interest and enhance learning experiences for both students and their teachers. One outcome has been the validation of knowledge from farmer and food system professionals as a relevant body of experience that can be combined with theory and university knowledge to inform design of future sustainable food and farming systems.

4 KEY QUESTIONS

The issues and challenges that the initiative addresses are outlined below:

Q: How to transform curricula and teaching approaches in organic agriculture from the bottom-up (teacher-student interaction)?

Q: Is the transition towards agroecology interrelated with change of teaching methods and approaches in respective courses – and how?

Q: How to expand innovative teaching methods and ensure teaching quality in organic agriculture?

Q: How to transfer knowledge and to build capacity in organic agriculture and agroecology teaching in new EU member states?

5 PRACTICALITY

A number of key lessons learned from the ENOAT initiative include the following:

- It is a real necessity to change the teaching approaches especially in the organic agriculture area towards more interactive ones. The regular lectures ex-cathedra should be diminished, but not completely withdrawn. Instead a dialogue between the teacher and the students should be established. More debates, more on-farm case studies, and more participatory teaching are necessary.
- From an educational point of view it seems beneficial to cultivate maximum diversity in class and to provoke discussion, sometimes without reaching consensus
- The main teaching focus should be on the process of problem identification, without jumping to conclusions and priorities
- Academic and teaching discussions would benefit from moving towards exploring opportunities and providing potential scenarios
- Well-designed university courses should teach the students how to cooperate in subgroups in a good manner and with good results
- The whole process of knowledge transfer needs support from the authorities. The problem is that the authorities (especially those of the universities located in the new EU member states) are much more interested in the scientific outputs (papers published in good IF journals) and in technological advancements (new apparatus and facilities) than in innovative teaching approaches. They recognize e-learning as an innovative method, but participatory approaches are still undervalued.

6 REFLECTIONS OF ORGANISERS, FACILITATORS AND PARTICIPANTS

The professional development (PD) dimension of the ENOAT teaching workshops has been very well received and supported by the network's members. The collaborative and participative mode of the workshops seems to have been one of the key success factors of this initiative. Moreover, the participative nature of the workshops means that the organizers are often also facilitators and par-

ticipants in the PD process. Some participant reflections are provided below:

“The annual ENOAT workshops are the only place I have found where teachers frankly discuss their success and failure, and sincerely look for ways to improve their university teaching to benefit students.”

Charles Francis,
Visiting Professor of Agroecology, NMBU, Norway

“ENOAT was a stepping stone for me in 2001. It was an opportunity to meet the best European professors active in organic farming teaching and research; as a consequence it was possible to create several common didactic and scientific projects. In fact, ENOAT was extremely helpful in my professional career so I was able to build a strong group at my University.”

Ewa Rembiałkowska,
ENOAT Leader, WULS, Poland

“The workshops were (and still are) important meetings for the various perspectives, practices and updating of teaching inputs and methods through the open-minded atmosphere among the participants from all parts of Europe”

Peter von Fragstein und Niemsdorff,
Professor of Organic Vegetable Production,
University of Kassel, Germany

“The workshops inspire me very much. Our lectures need more feedback, discussion, motivation. This is probably similar throughout the Central and Eastern European region. In order to enhance the teaching quality in organic agriculture it should be therefore recognized which countries are the most advanced in this area, and the best practice models from these countries should be highlighted and possibly introduced in the rest of the countries.”

Prof. Jan Moudrý, University of South Bohemia

An informal evaluation of the ENOAT workshops on teaching methods has been performed in 2011 as a result of one of the workshops held at University of Kassel, Germany, where the network members discussed the following question:

“What activities provide you with the most valuable information on teaching?”

This question provided space for the participants to provide impressions of what was most effective in the current ENOAT workshops. They voted for excursions and discussions as first priority; lectures and local cultural tours received lower priority, and

posters on current country activities were the lowest. These preferences are probably shared about learning in general and our favoured activities are thus likely to be the most effective for students in our courses in organic farming and agroecology too. It has been therefore concluded that interactive hands-on teaching approaches and discussion-based learning are effective methods in organic agriculture teaching. As a result, the leaders of the ENOAT network recommended to reflect this experience also in the planning of future ENOAT workshops (von Fragstein und Niemsdorff et al., 2011).

7 OUTCOMES

There are several evident advantages of the ENOAT network. The collaboration since the 90s has resulted in knowledge being exchanged and transferred to the individual institutions and their students. Network partners have used the international contacts for creation of joint projects in the area of organic agriculture. The positive aspect of the rather loose and informal structure of the network is that ENOAT is very flexible and open to new members and initiatives. The downside of such structure is that ENOAT has no resources to apply for funds to European programs, which makes it difficult to organize more events and to maintain a good website. As a result, ENOAT is not well known in Europe, rather the network lives on good relationships of its members and external funds from the members' projects.

The invitation of several new partners from the new member states of the EU into ENOAT over the last 15 years is seen as a real benefit of the network, as the new member countries (all ex-socialistic countries) are using mostly old-fashioned teaching methods, such as regular lectures and practical trainings, but seldom with participatory approaches. On the other hand, in most old EU member states teaching methods have been changed over the last 15 years toward a much more participatory approach. Some EU countries have already introduced the innovative methods and use them regularly, for example Finland, Norway, Netherlands, France, and Germany. In consequence of the perceived necessity to “catch up” with these developed countries, some of the new ENOAT network members became very active in the group, including Poland, Slovenia, Bulgaria, Czech Republic

and Hungary. This resulted in enhanced capacity building in teaching and research in organic agriculture among the new members. The subsequent focus on informing some very new EU members such as Croatia as well as other countries such as Kosovo and Turkey about the innovative methods in learning organic agriculture is seen as an important aspect for the development of their educational sector and teaching competences of university teachers in these countries as well as further away. A project financed by SIDA over five years has for instance introduced these methods in new Agroecology MSc programmes in Makelle University [Ethiopia], Martyrs University [Uganda], and SLU in Alnarp [Sweden], building on ideas discussed in the ENOAT meetings.

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- von Fragstein und Niemsdorff, P., Francis, C., & Rembialkowska, E. (2011) ENOAT in the Future: Further Development of European Collaboration in Organic Agriculture and Agroecology Education. Proceedings of ENOAT Workshop, Witzenhausen, Germany, 1-3 September 2011, ISBN 978-82-483-0073-1

Additional readings:

- Proceedings of ENOAT Workshops:[availability is pending on NMBU website for agroecology]
- 2007. Teaching and Research in Agroecology and Organic Farming: Challenges and Perspectives. Proc. ENOAT Workshop, Pieve Tesino, Italy, 28 August - 1 September 2007. Fabio Caporali, Geir Lieblein, Peter von Fragstein, and Charles Francis, Editors. ISBN 978-88-903318-0-0
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- 2009. Organic Agriculture and Agroecology Teaching. Proc. ENOAT Workshop, Tartu, Estonia, 28-30 August 2009. Charles Francis, Ewa Rembialkowska, Peter von Fragstein, and Anne Luik, Editors. ISBN 978-82-483-0063-3
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- 2011. ENOAT in the Future: Further Development of European Collaboration in Organic Agriculture and Agroecology Education, Proc. ENOAT Workshop, Witzenhausen, Germany, 1-3 September 2011; Peter von Fragstein, Ewa Rembialkowska, and Charles Francis, Editors. Available at: ISBN 978-82-483-0073-1 [pending]
- 2012. Learning in Future Farming and Food Systems: European Education in Organic Agriculture and Agroecology. Proc. ENOAT Workshop, ISARA,

Further information:

Please note that ENOAT does not currently have its own updated website. Further information can be obtained in the resources below or directly from the initiative contact persons.

Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



- Lyon, France, 30 August - 1 September, 2012. Alex Wezel, Ewa Rembialkowska, and Charles Francis, Editors. Available at: ISBN 978-82-483-0074-8 [pending]
- 2013. European Collaboration in Organic Agriculture and Agroecology Education, Proc. ENOAT Workshop, Plovdiv, Bulgaria, 29-31 August 2013; Ivan Manolov, Ewa Rembialkowska, and Charles Francis, Editors. Available at: ISBN 978-82-575-1245-3 [pending]
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Other Publications from ENOAT Workshops:

- Francis, C. (2014). Participatory learning experiences: what these mean to me as an agroecology instructor. NACTA J. 58(1):81-84. Available from <http://www.nactateachers.org/teaching-tipsnotes.html>
- Lieblein, G., & Francis, C. (2013). Faculty prerequisites for dialogue-based education. NACTA Journal 57(3):72-74. Available from <http://www.nactateachers.org/teaching-tipsnotes.html>
- Wezel, A., & Francis, C. (2014). Language challenges in MSc Agroecology international courses. NACTA Journal 58(2):175-177. Available from <http://www.nactateachers.org/teaching-tipsnotes.html>
- von Fragstein und Niemsdorff, P. (2009). ENOAT-European Network of Organic Agriculture Teachers. Available from http://orgprints.org/14515/1/FragsteinundNiemsdorff_14515.pdf
- Jordan, N.R., D.A. Andow, and K.L. Mercer. 2005. New Concepts in Agroecology: A Service-Learning Course. Journal of Natural Resources and Life Science Education. 34:83-89.

Relevant web links:

- ENOAT website (2004 version): <http://www.umb.no/enoat/article/european-network-of-organic-agriculture-university-teachers-enoat>
- About ENOAT (in Czech): <http://www.bio-info.cz/zpravy/enoat-podporuje-vzdelavani-studentu-v-ekologicke>

3/ RUCAS: Cross-regional ESD professional development for reorienting university curricula to address sustainability

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Tempus

1 OVERVIEW

The RUCAS (Reorient University Curricula to Address Sustainability) project was initiated by the UNESCO Chair in ICT in Education for Sustainable Development (ESD), Department of Primary Education, University of Crete, in cooperation with the RCE Crete (Regional Centre of Expertise on ESD). It consisted of a Consortium of 12 Universities and three NGOs financially supported with a grant of EUR 850,000 by the European Commission's Tempus program for a three-year period (2010-2013).

RUCAS aimed to:

- 1) Support the development of ESD in the Higher Education sector in Egypt, Jordan and Lebanon.
- 2) Build capacity amongst university staff to embed ESD in curricula and pedagogy.
- 3) Review and revise undergraduate curricula to address ESD in line with the Bologna and Lisbon processes.
- 4) Assist the coordination and dissemination of ESD policy, research, curriculum reform and practice in the partner institutions that are expected to function as role models in the region.

First, a Delphi study was designed and carried out that led to the advancement of an ESD student competence framework. On the basis of this framework, a survey was designed and carried out in the partner universities with the participation of 3,757 final year students across six academic disciplines. The aim of the survey was to identify, among other things, the knowledge students acquire from their courses in relation to sustainable development, the sources of sustainability knowledge, the teaching methods, the attitudes toward learning to live sustainably, sustainability actions and the perceived functions and roles of universities. The results of this survey were used for developing the strategy and the capacity-building program for reorienting university curricula to address sustainability. Despite the fact that almost half of the students surveyed had some experience with courses dealing with issues that directly and/or indirectly related to sustainability, just adding and/or embedding sustainability in one or two courses being taught with conventional pedagogical methods did not lead to any significant response to the current sustainability crisis. There was thus a need for a professional development intervention in reorienting curricula and teaching methods to successfully address sustainability.

2 PROFESSIONAL DEVELOPMENT PROCESS

In preparing university teaching staff for integrating ESD approaches into their practice as educators, we are usually faced with at least three crucial decisions: 1) what to teach and how to teach it; 2) how to design and implement a course; and 3) how to ensure that students are learning what is expected of them. We have worked out a model of seven interactive and cyclical processes to respond to these three critical questions (see **Figure 4.4**). The RUCAS model provided the guiding instrument in the professional development process to increase the readiness of university teaching staff for reorienting university curricula to address sustainability.

The RUCAS model works as follows:

- 1) **Deciding what to teach and how to teach it** focuses on the first two out of seven RUCAS professional development processes, namely: i) planning for course revision and design, and ii) creating the revised course syllabus. In dealing with the tasks integrated into these two processes university teaching staff participating in the RUCAS project needed to critically reflect on the content of their courses and teaching methods to see what gaps and what emphases were missing in relation to sustainability. In particular, the tasks involved in the process of course revision enabled university instructors to identify objectives for ESD that suit their subject area and the content that is missing, then proceed to matching both objectives and content as well as what is suitable to ESD teaching/learning methods (e.g. values clarification, problem-based learning, critical reflection). The ESD themes ranged widely, and the key strategic themes included climate change; energy use and management; sustainable urbanization; natural resources (water security, deforestation, sustainable agriculture, biodiversity); child labour, sustainable tourism, fair trade, social justice; indigenous knowledge; sustainable production/consumption. The tasks involved in the process of creating the revised course syllabus focused on identifying key learning goals/objectives and outcomes, formulating appropriate feedback and assessment procedures, and selecting and developing suitable teaching/learning activities, mostly student-led. In designing feedback and assessment tasks

an emphasis was placed upon strategies that helped to develop student's own capacity for self-assessment in learning.

- 2) **Designing and implementing teaching** focuses on the third and fourth professional development processes, namely: iii) structuring the course modules, and iv) implementing the revised course. Structuring the course syllabus into course modules implies first, a re-organization of the weekly topics in the syllabus, and second, aligning the course goals/objectives and learning outcomes to course modules' structure. Successful implementation beyond the readiness of the teaching staff requires certain conditions such as infrastructure, appropriate pedagogy, teaching resources and tools.
- 3) **Assessing, maintaining and changing foci** on the fifth, sixth and seventh professional development processes, namely: v) reviewing the progress of course implementation, vi) evaluating the course impact, and vii) maintaining and/or planning new revision. Pre-in- and post-course surveys were used to assess student learning from the start of the course until the end, adopting the strategies of reflection *in* and *on* action. Evaluating the RUCAS revised courses contributes to the continuous improvement and enhancement of the curriculum revision process and of teaching and learning for sustainability through review, reflection, and action for improvement. An impact evaluation reveals the extent to which any observed changes in outcome indicators are due to program activities. Such processes imply that professionals have the capacity to consciously think and possibly make changes about what they are doing while they are doing it, especially through critical action research. The RUCAS model processes for ESD professional development might lead to a new revision at a certain point in the future as a result of new challenges and needs.

3 ESD FRAMING

The ESD curriculum was perceived by RUCAS as process, context and praxis. As a process, reorienting university curricula to address sustainability is not an end, but rather the interaction of teaching staff, students and knowledge. As context, curriculum was contextualized in ways to reflect the

local/regional environment. The notion of reorienting a university curriculum as praxis holds that sustainability practice should not focus exclusively on individuals alone nor teaching staff and/or students or the group alone, but also on the way in which individuals and the group create understandings and practices, as well as meaning through critical reflection.

ESD was perceived as: a means to balance environmental, social, economic and cultural perspectives; contextualized through linking the local, the national and global; multi-stakeholder driven, engaging students, instructors, administrators, community and public sector; multi-methodological, using a variety of pedagogical methods that promote active and participatory learning; emphasizes sustainability justice, reflecting environmental, social, economic and cultural justices; and focuses on active local/global citizenship.

ESD can be a powerful force for change through interdisciplinary teaching, learning and curricula enabled through the use of learning technologies and pedagogies that promote reflective, reflexive, participatory learning and skills development, as well as merging knowledge with action that can empower people and generate change.

4 KEY QUESTIONS

The issues and challenges that the initiative addresses include:

Q: What measures should be taken to strengthen stakeholders' inputs in the curriculum development process towards sustainability?

Q: How can we train university staff for course revision to address sustainability, especially from different disciplinary backgrounds?

Q: How can we transform faculty perspectives and teaching paradigms to embed sustainability in the university curricula?

Q: How can we develop local ownership and self-reliance in order to generate changes and sustain efforts to make major curriculum transformations towards sustainability?

Q: What kind of supportive infrastructure is needed to institutionalize the embedding of sustainability education in university curricula?

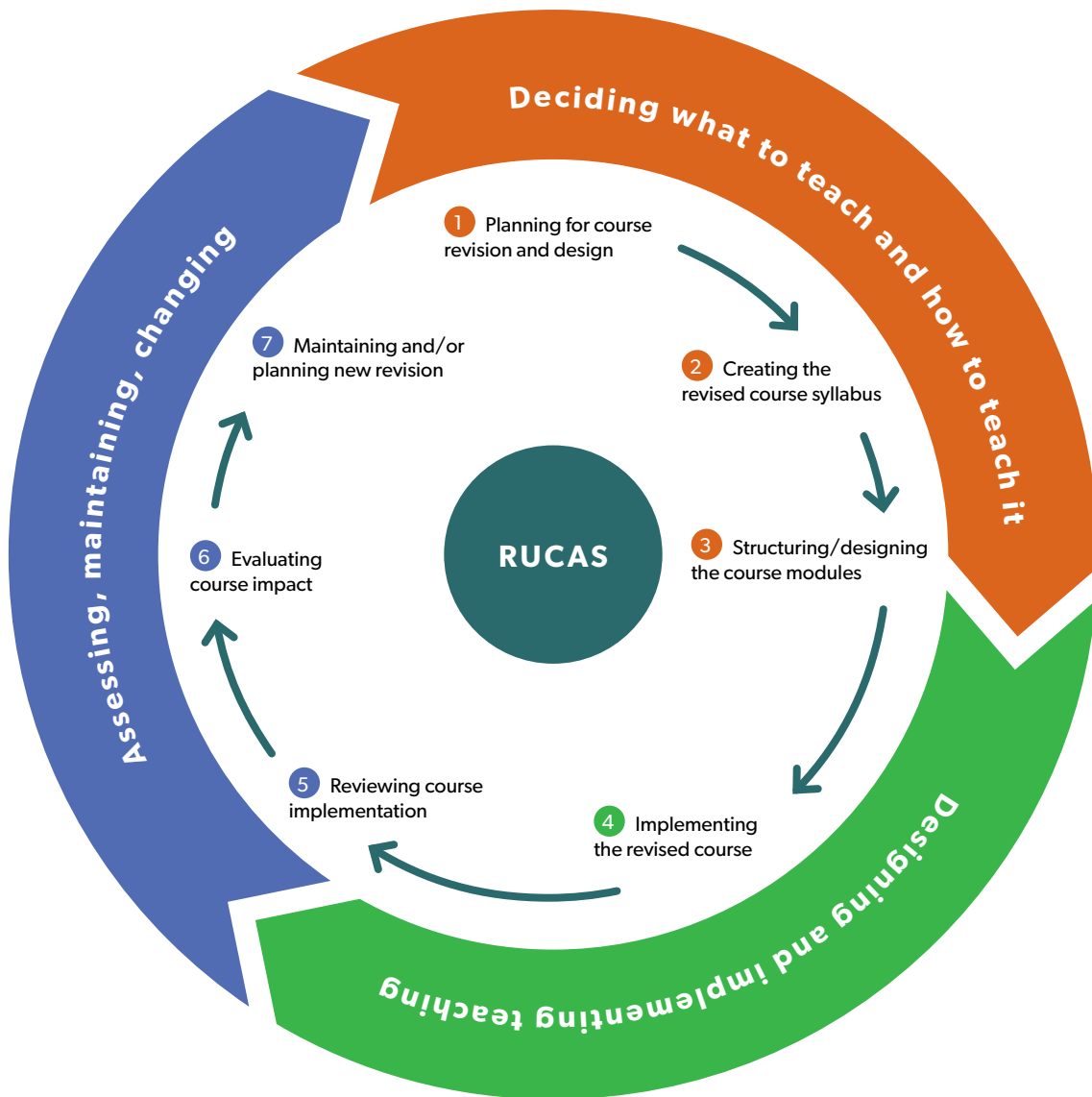


Figure 4.4 – The RUCAS model of seven interactive and cyclical processes for integrating ESD approaches into university teaching practice.

5 PRACTICALITY

The key lessons learned from the RUCAS experience are:

A professional development process to equip university teaching staff and other stakeholders in reorienting university curricula to address sustainability demands thorough planning based on a mixed-method research to measure perceived knowledge, skills and attributes related to sustainability literacy as well as teaching practices. At the student level, sustainability literacy conceptualized

within the framework of the five clusters of learning to be, learning to know, learning to live together sustainably, learning to do and learning to transform oneself and society, provided a good framework for embedding sustainability in curricula. At the university teaching staff level, sustainability literacy was interpreted as their capacity to: (a) understand the broad, complex nature of sustainability, (b) apply interdisciplinary problem-based learning in tackling sustainability issues, and (c) be able in deconstructing and reconstructing what they teach and how they teach it to address sustainability. For both stu-

dents and staff sustainability literacy was also about critical reflection, empowerment, personal change and social transformation.

Developing local and regional leadership that could sustain curriculum transformations and make major transformations at various domains and levels proved to be very critical. Distributed leadership was also found to be of critical importance together with encouragement for the co-production and sharing of knowledge.

Setting-up an internal and external monitoring and quality assurance system was seen as highly critical to the professional development process.

The building of a supportive infrastructure and a mechanism by which different stakeholders can work together helped to foster the attempted transformative actions to change course content and instructional methodologies.

Contextualizing sustainability that takes into consideration local problems and issues; organizing symbolic rewards to the most committed (e.g. certification, champion awards); identifying barriers and drivers; and providing required materials and resources in a timely manner were found to be highly critical strategic decisions.

6 REFLECTIONS OF ORGANISERS AND FACILITATORS

"I am noticing a more defined way to teach students how to link the different facets of their lives, whether social, economic or scientific together. Students became more enthusiastic about the material taught in class as they relate it to their own lives. Many of them sent me emails by the end of the course telling me that they learned a lot in the course and they were introduced to new concepts that they never learned during their three years of Bachelor degree."

Teaching staff participating and facilitating national workshops and course revision process.

"There were links of whatever students learnt to the practice in real life situations. [Instructors] used different assessment techniques that captured students' authentic abilities."

Dr Nehal Lotfy H. Khalil, Suez Canal University, Egypt, Institutional Coordinator

"The training workshops showed that sustainability can be infused in any course, even in courses that are considered as hard core business/economics/mathematical in nature.... students became more enthusiastic about the material taught in class as they relate it to their own lives."

Dr Nancy Kanbar, Notre Dame University, Lebanon, Local Coordinator

"The overall conclusion is that the colleagues demonstrate high awareness and skills for infusing sustainability in their syllabi. This was not only from a theoretical perspective but also from an application point of view, since many courses infused ethics and motivated sustainable behaviours."

Prof Michele Biasutti, University of Padova, Italy, Peer-Reviewer

7 REFLECTIONS OF PARTICIPANTS

Participating teaching staff indicated and described the type of pedagogies used during the students' practicum in various community sites and explained further how these pedagogies were used. The following quotations reflect the great majority of those who have shared their "good practices".

"Compared with the old way of teaching my courses, I saw a clear change in the students in that they are more eager to learn because of the links shown between what is discussed in class to their lives and how to live sustainably."

Dr Nancy Kanbar, Notre Dame University, Lebanon

"I learned how to apply various pedagogical strategies e.g.: group-work, self-reflection, peer discussions on global real life topics or controversial issues, and to employ alternative means of assessment, as performance tasks, data gathering assignments, research projects, oral presentations and portfolios."

Dr Theodora De Baz, Hashemite University, Jordan

"At the beginning I didn't know how I can incorporate ESD in my courses. This is because my subject is pure science. After attending the first workshop, I started to think differently I witnessed a greater change ... [and I] really like this new way of teaching ..."

Dr Ibrahim al-Oqily, Hashemite University, Jordan

“My role as a teacher has changed as well as the role of my students... the students play some role in course planning, implementations, and even evaluation strategies and tools.”

*Dr Khawlah A. Abdalla Spetan,
University of Jordan*

8 OUTCOMES

The interventions carried out by the RUCAS project have contributed significantly to building capacity among a corpus of university teaching staff in each partner university who in turn initiated course curriculum revisions to address sustainability. In total, more than 100 teaching staff in the partner institutions have been part of the professional development process that made them able to revise their courses.

RUCAS has resulted in more than 170 university courses being revised to address sustainability across the six prioritized academic disciplines (educational sciences, social sciences, applied sciences, technical sciences, business/economics sciences and health sciences).

A RUCAS Sustainable Universities Network portal (<http://rucas.edc.uoc.gr>) has been developed which focuses on the institutionalization of sustainable development within our partner universities and beyond. Virtual Training Centers are also established in each Arab partner university (N = 6) which are used for capacity-building and as resources for reorienting university curricula to address sustainability.

The RUCAS Toolkit (<http://www.rucastoolkit.eu/>) – a collection of tools and resources structured within eight modules, and an online community of practice and related resources can be used to assist university instructors and other staff in reorienting university curricula to address sustainability.

More than 4,000 students were involved in the monitoring and evaluation activities. Students that participated in practicum placements totalled 1,861 during the autumn semester 2012–13. The general trend was that almost all the themes of the practicum assignments were contextualized in the local environment.

While interdisciplinary teaching was very seldom a declared practice before the RUCAS project, through its capacity building program, the good practices show a shift away from mono-disciplinary teaching to interdisciplinary teaching and learning.

Further information:

The RUCAS Sustainable Universities Network portal:
<http://rucas.edc.uoc.gr>



The RUCAS Toolkit:
<http://www.rucastoolkit.eu/>



Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



4/ ECO CAMPUS:

Thematic learning networks in Flanders, Belgium

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Meeting of the Learning Network for Business Studies (10/02/2015)



1 OVERVIEW

The Ecocampus project was officially launched in 2008 by the Flemish government, Department of Environment, Nature and Energy to support higher education institutions (HEIs) in the transition towards a more sustainable future¹. In order to help HEI to structurally embed (E)SD in their mission statements, curricula and competence profiles, it offers a wide range of materials and initiatives: from guidelines, manuals and theoretical frameworks for conferences and seminars to workshops, debate cafés and best practices from various HEIs, etc.

One of the initiatives promoted by Ecocampus is the organisation of thematic learning networks. Ecocampus wants to bring together educators from various HEIs and create accessible opportunities for them to enhance their teaching practice in the field of ESD. The meetings are open to all educators of HEIs, experts, non-profit organisations, etc. and focus on the following aspects:

- knowledge building/theoretical frameworks for sustainability in HE;
- methodologies/didactic approaches to integrate ESD competences in the classroom;
- the opportunity for the participants to network and to learn from each other by sharing their experiences, successes and problems.

2 PROFESSIONAL DEVELOPMENT PROCESS

In the academic year 2014–2015, three thematic learning networks (LN) are organised: the learning network for social work (LNSW), the learning network for teacher training (LNTT) and the learning network for business studies (LNBS). Furthermore, a new network was created for ESD professional development, aimed principally at policy makers in HEIs in order to enhance the possibilities of professional development for ESD. Currently, there are plans to create a learning network for architecture and health care and to reactivate the learning network for engineering.

In this case study, we will describe the LNSW, the LNTT and the LNBS, since they are the most representative for the way the LN are conceived. A visual representation of the functioning of the LN can be found in Figure 4.5.

2/1 How the Learning Networks work

Each LN organises three meetings of ½ or 1 day each per year. In general, the meetings are attended by 15-20 participants:

- the president of the LN (HE educator, often a “pioneer” in the field of ESD, with a certain authority in ESD);
- an Ecocampus employee (who organises the meetings in close collaboration with the president);
- experts/keynote speakers (professionals, non-profit organisations, ...) who are invited to provide background on the theme that will be discussed;
- participants (mainly HE educators, but also researchers and students).

Even though there is no strict format, each meeting is characterised by the following principles:

- Introduction and discussion of theoretical concepts/models/frameworks (e.g. seminar on systems thinking; conferences by invited keynote speakers with academic background; etc.)
- Testimonials, case studies, best practices of introducing theoretical concepts into the classroom (e.g. classroom project developed by a non-profit organisation with a clear focus on systems thinking); visit to projects (e.g. LNSW visited some social projects in the multicultural Rabot quarter in Ghent).
- Development of practical tools that can be used in the classroom, with input from Ecocampus, external partners (mainly non-profit organisations) and the participants themselves (e.g. in 2013, an ESD competence profile was developed for teacher trainers. In 2015, the LNTT developed another publication that presents good examples of classroom practices that incorporate the different ESD competences).

¹ In Flanders, the Ecocampus project is one of the initiatives that meet the objectives of the UNECE Strategy for Education for Sustainable Development adopted in 2005. It was launched in 2008 for a term of three years and renewed in 2011 for another four years. In 2015, the Flemish government will decide on which way the Ecocampus project will be shaped in the future.

The themes discussed during the meetings are inspired by suggestions made by the participants, on topics that have been discussed in the media, or on projects that allow some kind of collaboration (e.g. the Flemish Material Program launched by OVAM-The Flemish Waste Management Company).

2/2 What is asked of participants

The LN try to deal with the workload of educators by creating optimal conditions to share and to put into practice the key concepts of ESD. As participants attend the meetings on a voluntary basis, much importance is attached to the degree of efficiency of the meetings: one of the main goals is to provide HE educators with concrete ideas and materials that can be integrated into their own course practice without significant extra work, e.g. didactic presentations on a specific topic which can be adapted and used by other participants.

Furthermore, co-creation is one of the key factors of the meetings: participants are invited at all times to discuss the themes proposed, make suggestions, participate in the development of output materials, etc. This idea of “co-creation” even seems to be a premise to make the LN succeed. Without a “common goal”, LN face the risk of not providing added value for the participants.

3 ESD FRAMING

3/1 Ecocampus reference guide

Ecocampus has developed its own ESD guidance framework to stimulate the debate on sustainability in HE. The framework was written by a group of researchers and is based on a rigorous analysis of the literature published in the field of higher education for sustainable development (HESD)². It proposes definitions for the concepts of sustainable development, sustainable higher education and education for sustainable development, and describes different drivers and barriers that can be encountered in the transition process towards a more sustainable higher education. The Ecocampus reference guide not only presents educational aspects in HESD, but also

refers to the other key roles of HEIs: research, outreach and campus operations (Waas et al., 2012).

3/2 ESD frameworks and the Learning Networks

The learning networks focus primarily on the key competences for ESD as described in the UNECE framework (2012) and by authors like Wiek et al. (2011), Rieckmann (2012), Roroda (2010) and Lambrechts et al. (2013). Although different sets of key competences are defined and presented in different ways, they all refer to the same theoretical concepts: systems thinking competence, normative competence, anticipatory competence, strategic competence and interpersonal competence (as presented by Wiek et al., 2011). These competences and the key concepts defined in the Ecocampus reference guide served also as a starting point for the *Guide sustainable development as a compass in the preparation of learning outcomes* (2014). The competences as defined in the UNECE competence framework were adapted to the context of teacher training, which resulted in the ESD competence profile for teacher training that was published in September 2013.

In April 2013, a seminar on systems thinking was organised by Ecocampus. The seminar was the starting point for a series of meetings on the integration of systems thinking in the different subject areas of the learning networks. Another key concept used in the LN is the concept of “wicked problems” (Rieckmann, 2012; Wiek et al., 2011) that is often used to describe the challenges related to SD: complex social problems that require an inter- and transdisciplinary approach in order to deal with them and find solutions. The concept encourages educators and students to start experimenting in order to find answers to the problems posed whereby the process is more important than the solution itself. In the long term, this approach aims to make educators and students act sustainably in almost every aspect of their everyday life.

3/3 Approaches to learning

The methodologies used by and/or presented during the LN are very diverse and depend on the goal of the meeting and the activities

² The framework is available at <http://ebl.vlaanderen.be/publications/documents/50318> (scroll down the document for English).

proposed. However, most of them meet the following principles:

- Multi-, inter- and transdisciplinarity: even if each LN is related to a specific discipline, the focus is on the interaction between the various subject areas within that discipline.
- Problem- and project-based learning: the materials and methodologies presented are often presented as case studies and projects where practice leads to theoretical insights, reflection and awareness, and attitudinal change.

Examples of methodologies promoted by the LN are (based on Lambrechts et al. 2009, Lambrechts et al., 2013):

- Interactive and participatory methodologies (e.g. group discussions, role plays which take into account the different stakeholders involved in the process, Socratic method);
- Research oriented methodologies (e.g. CSI smartphone, which invites the students to analyse the materials used in their own smartphone and to measure the impact of them in terms of SD (Wals: 2014); road pricing: what are the benefits for government? And what's the ecological impact?)
- Action oriented methodologies: project weeks, internships, company visits, etc.

4 KEY QUESTIONS

The issues and challenges that the initiative addresses are:

Q: How can we reach the various small islands of (E)SD in different HEIs and connect them so that they can share experiences and find the support needed to embed ESD in their HEI?

Q: How can we equip educators with both the theoretical knowledge and practical methodologies that can easily be used in everyday classroom practice? How can we contribute to this "sustainable reflex" that ensures that ESD is not a matter of one or two isolated courses, but will be integrated into the whole curriculum?

Q: How can we develop instruments and toolkits that are general and flexible, but at the same time concrete and precise enough, and useful for the diversity of curricula in Flemish higher education?

Q: How can we reconcile the complexity of "wicked problems" and the need of an inter- and transdisciplinary approach (which, in the most ideal context, would require an important curriculum shift) with the actual landscape of Flemish higher education?

Q: How can we involve our students in the ESD process and equip them with the competences they need to face future challenges (e.g. systems thinking, holistic thinking, etc.)?

DIAGRAM

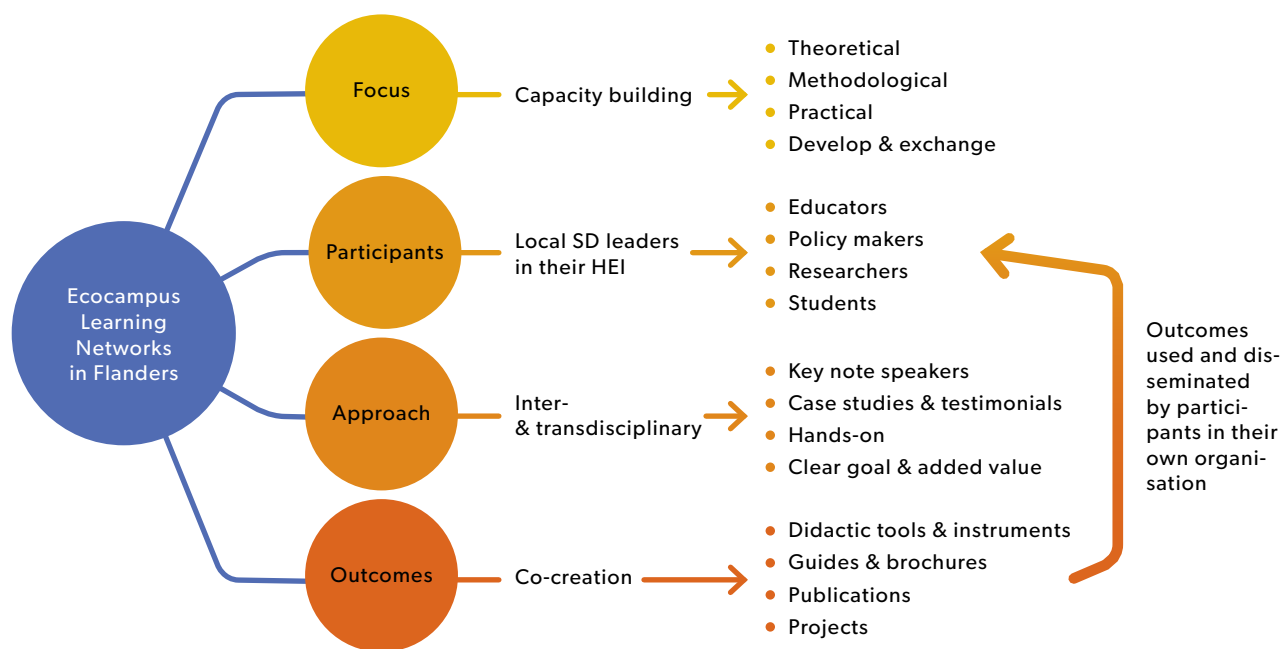


Figure 4.5 – Ecocampus Learning Networks in Flanders

5 PRACTICALITY

The key lessons learned are:

- Capacity building: the small number of LN members (about 20 members per network) facilitates the interaction and makes it possible to adopt a collaborative approach.
- Participation: it is essential to build a strong relationship with the educators involved in the process in order to ensure the continuity and the quality of the meetings and outcomes.
- Inter- and transdisciplinarity: the input from experts and representatives of civil society is considered essential added value.
- Co-creation: participants see the clear added value of their participation in the LN thanks to the hands-on approach of the meetings. This added value could be defined as the co-creation of a shared outcome or product, e.g. a didactic presentation, a publication, etc.
- HEI profile: educators who attend the LN mainly come from university colleges that offer professional bachelor programs. The way these programs are designed, seems to be more open for the collaborative, inter- and transdisciplinary methodologies promoted in ESD.

6 REFLECTIONS OF ORGANISERS AND FACILITATORS

The LN are a very effective way to enter into a dialogue with the different actors in the field of ESD. The focus of the LN and the way they are designed evolve with the needs of the participants.

“The goal of the LNBS is to help teachers in developing their course on sustainability, corporate social responsibility and business ethics. Apart from dealing with the question whether sustainability should be integrated into the traditional courses of a study programme in economics or whether it should be a separate course, the network especially focusses on hands-on material for teachers. At the beginning not a lot of material in relation to sustainability was available on the market. Teachers were asking for these guiding tools and learnt from each other through the exchange of experiences. The focus of the network

gradually evolved from a rather top-down approach to a bottom-up approach. The aim is no longer to only invite experts in the topic of sustainability, but also to give the opportunity to the learning network to develop study material in the field of sustainability than can be used by teachers in higher education for economics.”

Professor Ingrid Molderez, President of the Learning Network for Business Studies

The idea of co-creation can be considered as the key to the success of the LN. The quality and the impact of the LN sessions rely on the expertise of the different stakeholders involved:

“We started working with Ecocampus eight months ago. From the beginning, we shared the same ideas and values. During one of the meetings, Catapa received the possibility to present a resource exploitation case. Thanks to the input of the Ecocampus team, we could adapt the case to the context of ESD. The feedback we receive from the participants of the LNBS helps us to further develop the tool and to come up with a final version that can be used in various Business Studies programs.”

Charlotte Christiaens, Coordinator Catapa vzw³

Despite the success of the current formula, it may be appropriate to explore other options as well.

“HE is changing substantially, educators don’t always have the opportunity to physically attend the LN meetings. Therefore, it can be useful to rethink the organisation of the sessions, for example by meeting virtually through the Internet. Moreover, more and more organisations offer PD programs specifically in the field of ESD. Why not engage with them in an attempt to coordinate (parts of) the PD initiatives?”

(Peter Schildermans, Ecocampus)

7 REFLECTIONS OF PARTICIPANTS

Participants recognise the opportunities created by the LN to enhance their knowledge and teaching skills in the field of ESD.

“As a lecturer in Social Work, I taught an optional course on Sustainable Development. A wide range of topics were discussed: energy (poverty), housing, mobility, nutrition, social welfare, etc. The LNSW not only helped

³ Catapa is a voluntary organisation that deals with (alter-)globalisation and sustainable development. Its main focus lies on mining industry, especially in Latin America.

me to build knowledge with regard to these topics – after each session, I went home with new insights and various resources I could use in my class –, but also to adopt a more critical attitude towards initiatives that deal with sustainable development (e.g. poverty reduction: why not wealth reduction? Are electric cars really a more sustainable alternative? etc.).”

Patrick Vleeschouwer, former Lecturer in Social Work, Artevelde University College

They also appreciate the variety of backgrounds of the participants and the networking possibilities offered by the LN.

“As a marketing lecturer, I had the chance to attend the LN session in December 2014. The session proved to

be very useful to me. On the one hand, I gained new insights on SD initiatives by both government and NGOs which I will be able to use in case studies during class. On the other hand, the meetings provide an interesting platform to bring different business schools together in order to share good practices and discuss priorities, as the topic is vast and relatively new for many of us.”

Sebastiaan Boussauw, Marketing Lecturer, University Colleges Leuven-Limburg

“Corporate social responsibility is becoming a priority in many companies and sustainability is also an important topic in our University Colleges. The LN is a place where people from different disciplines and with a different background can share best practices and come up with new tools to help teachers in preparing student to face the challenges in a fast moving world.”

Anne De Cort, Sustainability Coordinator and Lecturer, University Colleges Leuven-Limburg



▲ An illustration designed by Delphine Frantzen for the ESD Competence profile for Teacher Trainers. Ecocampus tries to collaborate with young artistic talents to add some ‘added value’ to the materials they publish. Artists tend to think “out of the box”, the way they interpret ESD principles can create an extra dimension to the (often) more abstract concepts used in ESD frameworks.”

8 OUTCOMES

The output of the LN meetings is published on the Ecocampus website. Reports, PowerPoint presentations and reference guides are downloadable from the website. Best practices are published on an online “inspiration wall”.

The LN we discussed above all led or will lead to some concrete outcomes:

- LNSW: didactic presentation on the link between social work and SD, which can easily be used and adapted by individual educators in their own courses⁴. Publication of best practices in the book *A resilient society. Social work and sustainable development* (Peeters, 2010).
- LNTT: ESD competence profile for teacher training (2013)⁵. An additional booklet with practical examples and case studies will be published in 2015.
- LNBS: toolkit which provides two case studies on mining extraction (Peru) and landfill mining (Belgium) that can be used in the curricula of business studies (toolkit

⁴ The presentation (in English) can be downloaded from http://www.lne.be/doelgroepen/onderwijs/ecocampus/acties/netwerken/lerende-netwerken/sociaal-werk/archief-in-sociaal-werk/SocialSustDevelopment_ENSACT.pdf.

⁵ The booklet (in Dutch) can be downloaded from <http://www.lne.be/doelgroepen/onderwijs/ecocampus/kennis-en-instrumentenhub/edo-competentieprofiel>.

developed in collaboration with Catapa and OVAM; expected publication date: September 2015)

Participants of the LN assume the role of “LN ambassadors” and spread their insights with relation to ESD amongst their colleagues.

Recently, a LinkedIn group was established to reinforce the interaction within the LN communities and a broader network of HEI representatives.

The concept of LN seems to attract educators from other disciplines as well. For example, explicit interest has been shown in creating LN in the fields of architecture and health care.

Further information:

<http://www.lne.be/doelgroepen/onderwijs/ecocampus>



Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



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5/ GREEN ACADEMY: Programme for organisational ESD change at UK universities

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1 OVERVIEW

The *Green Academy* change programme is an initiative of the Higher Education Academy (HEA), the UK agency for teaching and learning development in Higher Education. The HEA also holds the UK's national HE professional recognition framework and offers training and development opportunities for academic staff. *Green Academy* was developed by the HEA as part of its commitment to ESD and brings together staff teams from different universities to plan, develop and implement institution-wide change initiatives. It was launched in 2011 and has supported 18 institutional ESD change projects in total across England and Wales: its first intake in 2011 involved 8 institutions and its second intake in 2013 involved 10 institutions.

The aim of *Green Academy* is to support the development of ESD as an institutional priority, focusing on organizational change by developing staff capacity in ESD as well as change agency skills. Its professional development process is informed by principles such as distributed leadership, change management, action learning sets and peer-to-peer learning. The ESD framing of the programme is geared to 'whole institution' ESD development, including the formal curriculum and co-curriculum. Its view of ESD is broad and includes a wide range of approaches to ESD across the different institutional projects.

Green Academy invites institutions to propose concepts and project plans and to form staff teams to implement their proposals. Institutional teams consist of 5-6 people and must include one senior manager, one student, one member of academic staff and one member of operational staff. HEA then provides the successful participating teams with a facilitated one-year cycle of development activity. Funding is provided by the institutions but the HEA has also provided investment to help share costs with institutions.

An evaluation process was conducted in two phases to assess the process and impacts of the first cycle in 2012 and 2014. The reports pointed to success for the participating institutions in raising the profile of ESD, embedding it into strategies and policies, initiating new curriculum development activities, student projects and actions, and in providing a range of staff professional development opportunities in ESD.

2 PROFESSIONAL DEVELOPMENT PROCESS

Green Academy draws on the successful 'Change Academy' model which was developed in partnership with the Leadership Foundation for Higher Education and has been in use in UK HE since 2004. The model focuses on professional development and also team development, to create institutional change in ESD. The process was developed to meet the needs identified in consultation events with English universities to understand the challenges of 'whole institution' approaches to sustainability and ESD. This project had shown the need for capacity-building to tackle the complexity of developing institutional strategies in ESD and it recommended the use of team-based approaches to support universities in this area.

The process is outlined in Figure 4.6. It begins with an initial meeting for the team leaders representing each participating institution, with the *Green Academy* team and mentors. Each institution is allocated a mentor with experience in ESD to support them during the cycle. A two-day residential event takes place in the second month, which is attended by all institutional teams and their mentors, focused on the development of plans for the change projects. The implementation phase is then supported by the mentor and the process concludes with a final meeting of team leaders at the end of the year. Teams are required to provide a closing report and write a case study, as well as offering a sector workshop to share their initiatives.

The year-long process of engagement enables learning and reflection for individuals, peer-to-peer, among teams and across institutions. Participants are able to develop action planning and strategy development skills, as well as gaining experience in leadership and change. Their professional development is supported with expert mentoring guidance and opportunities to learn from existing practices and successful initiatives in other universities, as well as relevant resources and tools.

The use of mentoring and examples from other institutional ESD initiatives is critical to help participants to understand the parameters of institutional change in ESD, identify suitable plans at their own institution and map the pathways and people who may help in bringing about successful changes. Facili-

tation at the residential event and the ongoing support provided by the institutional mentors aims to assist teams to:

- I) see how ESD approaches can be built into initiatives that will be valued by their institutions.
- II) combine their ESD aims with effective strategies, plans and implementation processes.
- III) understand and respond effectively to the change dynamics involved in their projects.

3 ESD FRAMING

The *Green Academy* programme uses a broad understanding of ESD in line with UN DESD frameworks. It views ESD as an institution-wide learning agenda for education provider organisations. This pioneering initiative responded to the need for a professional training process in ESD that involves team-based institution-wide change projects and is focused specifically on the HE sector context.

The ‘whole institution’ strategic framing of ESD is at the forefront of *Green Academy* and its aim is to support initiatives that contribute to change across the curriculum and student learning experience. Within this core aim, it supports ESD projects with very different focal points and understandings of ESD, depending on the nature of the institution and its aims in ESD. Projects have had various aims, such as:

- Developing sustainability skills initiatives for students linked to employability schemes
- Creating institution-wide strategies and plans to develop ESD within the curriculum
- Supporting campus-based learning for ESD and its links into the formal curriculum
- Auditing and increasing the teaching of sustainability issues across the existing curriculum
- Designing specific new curriculum developments in ESD, including online offerings
- Supporting research-teaching transfer and inter-disciplinary learning for ESD

- Developing graduate attributes and framing for ESD within learning and teaching strategies
- Providing staff development activities that raise awareness and increase understanding of ESD

Green Academy addresses specific dimensions of ESD that relate to institutional development in the HE context. Its framing of ESD professional development is therefore strongly orientated to the strategic level and the organizational context. It recognizes the importance of teams in enabling change for ESD and that teams must be able to identify the priorities and entry points that will make sense at their institutions.

4 KEY QUESTIONS

The *Green Academy* initiative is guided by key questions around organizational ESD development:

Q: How can HE institutions develop strategic responses to ESD that will involve all academic areas?

Q: What kinds of teams, plans and actions are needed to integrate ESD across the curriculum?

Q: How can ESD approaches be shaped to fit the needs and plans of different institutions?

Q: What capabilities, expertise and training do staff need for developing ‘whole institution’ ESD?

5 PRACTICALITY

Green Academy experiences point to the following insights about the process itself:

- An action-focused approach, geared to influence, engagement and implementation is most valued by participants in extending their capabilities to move ESD ideas forward effectively.
- The team-based approach was of significant value for driving institutional change in ESD, as it enabled ownership to be shared and confidence to develop in taking plans forward.
- The important role of students became clear, in terms of professional develop-

DIAGRAM

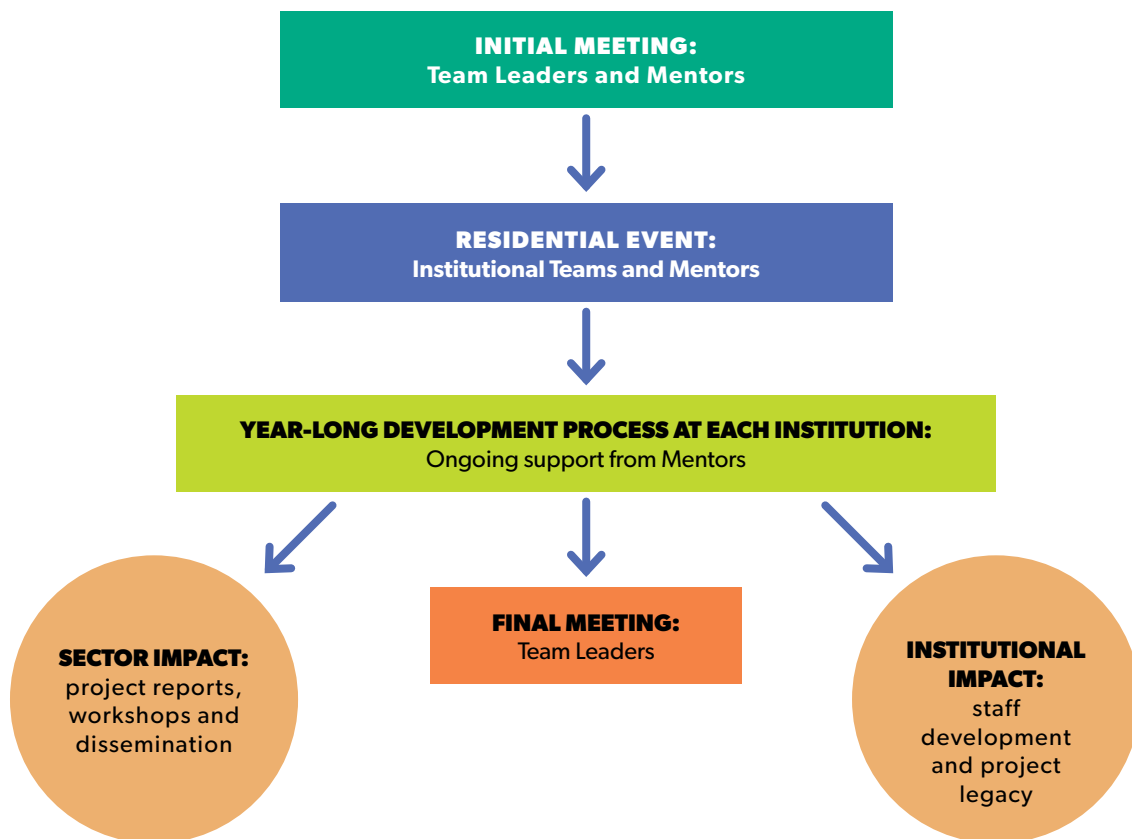


Figure 4.6 – Outline of the Green Academy process.

ment benefits for them and increasing the influence they could have on learning initiatives for ESD.

- The teams proved to have longevity and individuals remained involved in action for ESD after the *Green Academy* process ended, helping to continue the work and develop new initiatives.
- There were weaknesses in monitoring action and progress on the plans and objectives developed by the teams and this was noted in the evaluations as the key aspect of the process to improve.

6 REFLECTIONS OF PARTICIPANTS

The initial evaluation report on *Green Academy* considered the perceptions of the participants and noted their positive comments about the process, with particular emphasis

on the value of learning from others, of working with mixed teams and of having space to think strategically. Its case studies have captured the effects in terms of professional learning and development in participating institutions:

“The handbook process has been extremely successful in capturing engagement and driving implementation. Collaborative development and flexibility have been two key factors in achieving this... The resulting interest and action has been much deeper and wider than we had anticipated. The process is now moving very quickly and formal campus wide structures are being considered to maintain a co-ordinated approach and harness the growing engagement.”

University of East Anglia Case Study

“The value of the Green Academy lies in its team-based approach and its orientation towards the strategic priorities of the individual institution. Underpinning its change model is an understanding that change cannot be

undertaken by single individuals, and it must connect with general direction of the university. Participants may not always recognise the need to deepen their understanding of ESD as well as question assumptions about how change takes place. The mentors play a key role in supporting this dialogue.”

*Professor Daniella Tilbury, Dean of Sustainability,
University of Gloucestershire – Institutional Mentor*

“LCF has been working with the Green Academy programme to support development of long-term transformational change for sustainability across the institution... Through the Green Academy, LCF has been emboldened to connect good practice... taking Green Academy activities across the university, through participatory ESD sessions available to all staff.”

*London College of Fashion,
University of the Arts Case Study*

Professional development benefits were also noted as being particularly significant for the student team members, who gained experience in contributing to specific activities and to the wider change process. The students themselves were recognized as important change agents in the implementation

stages, playing key roles in the development of informal learning activities as well as curriculum change proposals.

The value of the peer-to-peer learning and the mentoring component was highlighted in the participants’ responses, with suggestions for more time to interact with other teams during the residential scoping and planning stage, as well as more support to the teams through the implementation. Informal interaction through the process was also significant, with participants developing and using *Green Academy* contacts for advice, particularly among the group of team leaders.

7 OUTCOMES

Assessment of the impact of the *Green Academy* programme reported that it had generated significant change in embedding ESD at strategic level for the participating institutions, increasing senior management understanding and raising awareness and profile for ESD across the institutional community. The strategic approaches developed by the



institutional teams were varied and they were designed and adapted to fit the needs of the institution and its existing teaching and learning initiatives, although the short time frame for the *Green Academy* process was noted as a limit on the scale of impact achieved.

The *Green Academy* projects triggered a range of different staff development activities at the institutions, including workshops and seminars for academic staff and for students, reflection and auditing of ESD in the curriculum and spaces to develop it, as well as creation of workbooks, toolkits and case studies in ESD. One common outcome was the creation of new curriculum offerings in ESD available to all students, usually through elective modules available across faculties and online open learning. Another common outcome was the creation of sustainability pathways within existing institutional awards schemes, to recognize extra-curricular activities and professional experience for students in ESD.

The evaluations noted that the process had not usually influenced the allocation of resources for ESD within the institutions, although one team leader had been recognized with a formal role title to reflect their strategic responsibilities in ESD and several staff members were given time allowances within their main duties to work on the ESD change projects. Longer term outcomes from *Green Academy* are harder to establish as a direct result of the process, due to the catalytic nature of the programme and the lack of evaluation of the effects on staff or students of the initiatives put in place.

The professional development of *Green Academy* team members was seen in their growing confidence in planning and delivering new staff development activities and ESD presentations for both academic and support staff. Further strategic gains were made at some institutions, to include ESD in existing induction and training provision for academic staff and to include sustainability in generic staff role descriptions.

Further information:

The Higher Education Academy – Green Academy website:

<https://www.heacademy.ac.uk/workstreams-research/themes/education-sustainable-development/green-academy>



Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



6 / CADEP-CRUE: Curricula and Sustainability Working Group, Spain

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1 OVERVIEW

The Higher Education Commission for Environmental Quality, Sustainable Development and Risk Prevention (CADEP) was set up by the Conference of Chancellors of Spanish Universities (CRUE) in 2008. CADEP emerged from the “Environmental Quality and Sustainable Development” working group that was set up in 2002 at the suggestion of 12 Spanish universities. The mission of the working group was to:

- 1) Strengthen environmental awareness and management of Spanish universities in order to minimise the impact that their activity has on the global and local environment.
- 2) Foster cooperation between Spanish universities in order to exchange university greening experiences.
- 3) Foster cooperation and coordination for the actions, both intra and inter university and with other stakeholders, for university greening.

During a meeting of the working group held at Universidad de Valladolid on 18 April 2005, the “*Inclusion of environmental aspects in the syllabus*” document, led by the UPC, was approved and submitted the same year for approval by the CRUE plenary session. This document was the basic benchmark to incorporate sustainability within the new syllabi designed as part of the Bologna process.

From 2008 onwards, the newly established *Curricula and Sustainability Working Group* (WG) led by the universities of Cádiz and Salamanca made progress in defining the principles, competence building and approaches for the introduction of sustainability to the university curriculum (source: *CADEP UPC 17/10/2008 minutes*). The WG is currently led by Universidad de Valencia and is developing approaches, criteria and projects to incorporate sustainability within the university curriculum. Academics, lecturers and technical staff are members of the WG. The initial WG has now grown into a network with 19 hubs with one hub per member university (see Box 4.3). Each hub comprises a group of people, the majority of whom are lecturers that implement the common initiative within their particular context. The curriculum development processes are the main focus and innovative teaching projects for building sustainability skills are being developed and implemented.

Box 4.3 – Organisations and partners involved in CADEP-CRUE

- **Universidad de Valencia** (UV)
- **Universidad de Cádiz** (UCA)
- **Universidad de Salamanca** (USAL)
- **Universidad Politécnica de Cataluña** (UPC)
- **Universidad de Córdoba** (UCO)
- **Universidad Internacional de Cataluña** (UIC)
- **Universidad de Burgos** (UBU)
- **Universidad Nacional de Educación a Distancia** (UNED)
- **Universitat Autònoma de Barcelona** (UAB)
- **Universidad Europea de Madrid** (UEM)
- **Universidad Complutense de Madrid** (UCM)
- **Universidad de Santiago de Compostela** (USC)
- **Universidad Miguel Hernández** (UMH)
- **Universidad San Jorge** (USJ)
- **Universidad del País Vasco /Euskal Herriko Unibertsitatea** (UPV/EHU)
- **Universidad Rey Juan Carlos** (URJC)
- **Universidad Autónoma de Madrid** (UAM)
- **Universitat de Girona** (UdG)
- **Universidad de Valladolid** (UVA)

2 PROFESSIONAL DEVELOPMENT PROCESS

The various activities of the *Curricula and Sustainability Working Group* (WG) build the capacities and competences of the members involved and enhance the professional development of university staff in ESD. The WG holds periodic online and face-to-face meetings. The online meetings, using Adobe Connect, are held monthly and began in February 2010. The face-to-face meetings, two per year, are held each time the CADEP Sectorial Committee meets at any of the member universities. These meetings aim, on the one hand, to share the difficulties, results, etc. among the different sub-groups that make up the network, and, on the other hand, to report on progress in the schemes they are working on together.

The structure of the WG is very flexible and open. Thus, when the circumstances so require,

fast reorganisation can take place that allows rotation in leadership to meet the needs of specific projects. The activities of the WG are carried out in four streams of work (see **Figure 4.7**):

a) Deployment of research projects in educational models and training processes

within the framework of Education for Sustainable Development (ESD). These activities are based on an international project: “Transforming with Society. University-Society Symbiosis in Education for Sustainable Development” and three joint projects: i) “Defining standards and profiles based on competences-building in ESD to improve the quality guarantee frameworks in the Spanish university system”; ii) “Methodological strategies, assessment criteria and learning guides in ESD”; and iii) “Training to transform. Principles and values of sustainable development in the university curriculum”. The results are used to prepare and implement *sustainability in the curriculum* projects.

The current ESD activities of the WG are also focused on the Learning Through Service (LTS) as a valuable strategy to include sustainability in university curricula. This approach complies with university legislation, which requires universities to foster citizen and social responsibility practices. LTS is an educational proposal that combines learning processes with community service in a single, well-constructed project in which the participants are trained whilst working on the real needs of the environment with the aim of improving it. The CADEP Sustainability and Curriculum Working Group advocates institutionalisation of LTS in Spanish universities to drive sustainability in the curriculum. The goal is to promote and facilitate the use of this methodology in the university so that students provide a service to the community linked to the learning goals, with a special emphasis on critical analysis and an understanding of social needs and problems and on involving students in a creative outcome. (Source: “*Learning Through Service as a teaching strategy within the framework of University Social Responsibility to foster Sustainability in the University*” October 2014-May 2015)

b) Preparing and presenting regulatory proposals to be approved by the Conference of Chancellors of Spanish Universities (CRUE).

c) Disseminating the results in the international and national scientific community: publications, congresses and seminars, the media, etc.:

The WG has been invited to join the organisers of the Research Seminars on Environmental Education and Education for Sustainable Development which emerged from the Environmental Education Inter-university PhD Programme at the National Environmental Education Centre. The main objective of these research seminars is to share experience in Research on Education for Sustainable Development. Thus, there are tutorial spaces for junior researchers which are tutored by senior researchers, members of the Curricula and Sustainability Working Group and experts from the Environmental Education Inter-university PhD Programme. The professional development provided by these university seminars embraces the training of researchers, and thus also impacts on teaching.

The WG has also organised 3 *Symposia* as part of the *International Congress of Educational Sciences and Development* in 2013, 2014 and 2015:

- *Skills Building in Sustainability: Pedagogical Problems in University Teaching* (coordinator: Dr. M. Angeles Murga - UNED)
- *Education for Sustainability in Higher Education: Innovation Processes and Transfer* (Coordinator: Dr. Mercè Junyent - UAB)
- *Education for Sustainability in Higher Education: Advances in Research* (coordinator: Dr. M. Angeles Ull - UV)

The aim of these symposia is to communicate and share experience in research, innovation and the transfer of ESD in higher education. They provide professional development opportunities on ESD to the participating lecturers and researchers.

d) Training academic staff.

The WG has organised a *Teacher Training Course: Introduction to Sustainability in University Teaching* to be taught at any Spanish University that expresses an interest. The aim of this course is to reflect on the responsibility of the academic course in terms of introducing sustainability criteria in their teaching. It also seeks to showcase the tools implemented in the universities in the curricula and sustainability processes when designing, teaching and assessing the subjects.

The network operates using the infrastructures provided by the respective universities and with the funding that the projects are granted in competitive calls.

3 ESD FRAMING

According to CADEP-CRUE, ESD at universities should be based on the following principles: ethics, holism, complexity, globalisation, mainstreaming and university social responsibility. University education for sustainability should integrate the fostering of

learning cross-cutting skills-building in the attitudinal, methodological and cognitive sphere. The integration of those three spheres will provide students with a critical understanding of environmental, economic and social problems, both globally and locally, the application of procedures for decision-making and performing actions consistent with

DIAGRAM

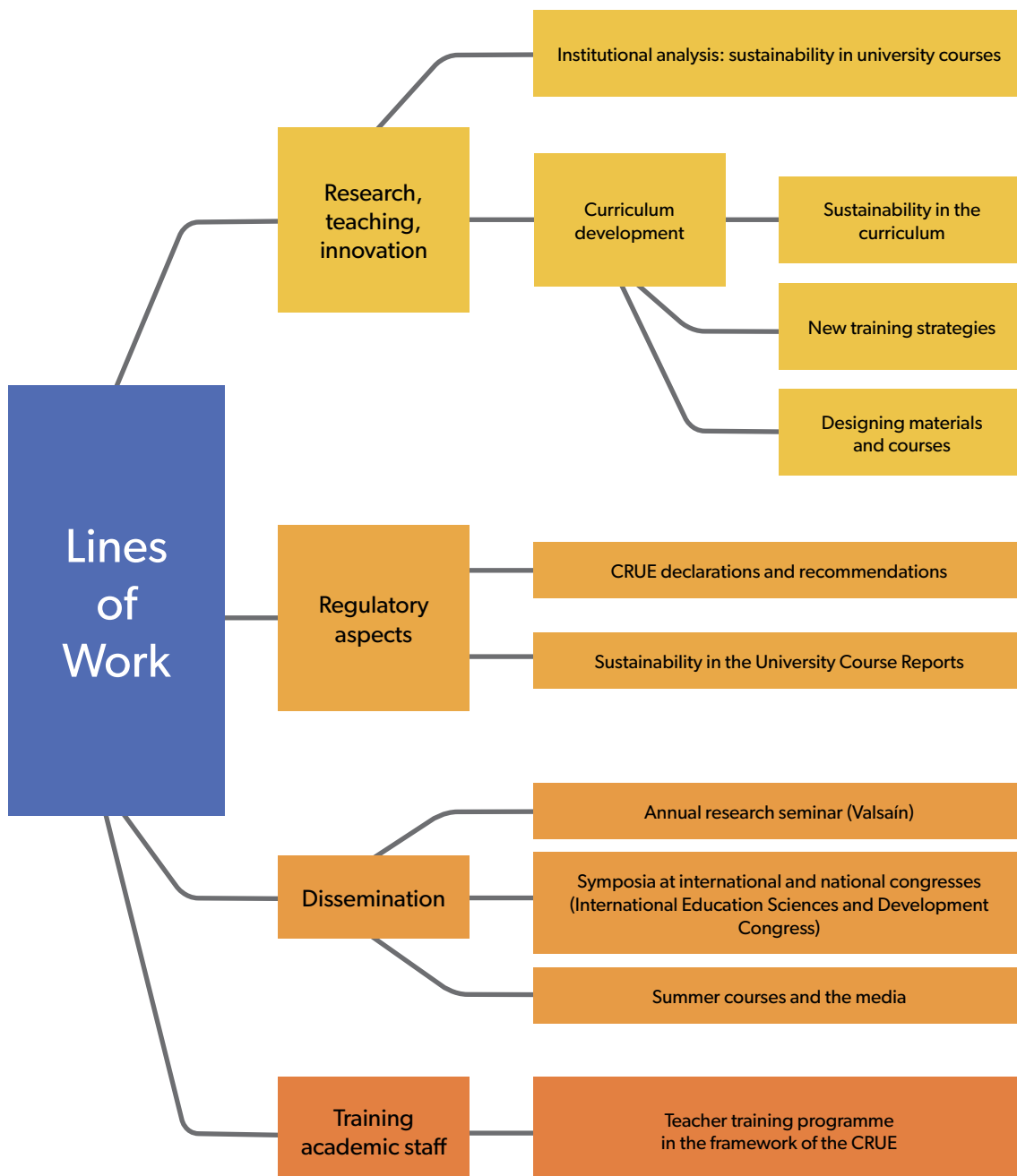


Figure 4.7 – Lines of Work of the CADEP-CRUE Sustainability in the Curriculum Working Group

sustainability, and building personal ethics consistent with the sustainability values that enable a sense of responsibility to be developed regarding the consequences of their own decisions and actions, along with the capacity to address ethical dilemmas and rationalise and justify their possible solutions.

The academic staff training courses therefore include a set of the following cross-cutting competence-building areas needed to be integrated in university education:

- SOS1. Competence-building in the *critical contextualisation of knowledge* by establishing interrelationships between environmental, economic and social problems, locally and/or globally.
- SOS2. Competence-building in the *sustainable use of resources* and in the prevention of negative impacts on the social and natural environment.
- SOS3. Competence-building in the *participation in community processes* that fosters sustainability.
- SOS4. Competence-building in the *application of ethical principles* related to sustainability values in professional and personal behaviour

Thus, the curriculum must be comprehensively reviewed to ensure the inclusion of the basic cross-cutting themes of sustainability in all qualifications, including sustainability criteria in the evaluation systems of university quality and in the evaluation process of the faculty. To that end, amongst other actions, the faculty must be qualified through the inclusion of sustainability content in their subjects.

4 KEY QUESTIONS

The key questions that CADEP-CRUE aims to address are:

Q: How can we involve other universities in the implementation of sustainability in the university curriculum and create synergies?

Q: How can we drive research in ESD?

Q: What kind of training is needed so that the faculty of whatever university grade can implement ESD in its subject?

5 PRACTICALITY

The practical lessons that have been learned from the *Curricula and Sustainability Working Group* are:

- Members of the WG value the collaborative work with an emphasis on finding synergies, sharing resources and expertise, sharing visions relating to sustainability and education for sustainability and progressing in relevant actions.
- The horizontal cooperation framed by the WG helps to build space for interaction to implement interdisciplinary research.
- The work of the WG is a stimulus for the involvement of other universities in the “sustabilisation” of the curriculum.
- The WG promoted comparative and shared research in EDS.

6 REFLECTIONS OF COORDINATORS AND PARTICIPANTS

The benefits resulting from the activities of the WG meet the global challenge posed by UNESCO on educational institutions in the Decade of Education for Sustainable Development (2005-2014). Its implementation schemes require international, national and local responses aimed at embodying, developing and assessing the path of university institutions towards sustainability.

“The information exchange among universities promotes collaborative projects and new partnerships. What should be highlighted is that universities that are part of the group develop research projects (i.e. calls issued by the Ministry of Economy and Competitiveness, 9 universities involved) share the supervision of PhD theses, and thesis committees as well, around complementary research lines that contribute to the institutionalization of sustainability in the respective universities: sustainability audits in labs, training courses addressed to degree coordinators, etc.”

Anna M. Geli, Universitat de Girona

“The WG promotes collaborative work that professional development processes require and, in this sense, to be part of the group it has facilitated (i) the learning and sharing of initiatives from other universities, (ii) discussion of strategic points to be included in the sustainability plans of the university, among which are those related to

curriculum greening and professional competences in education for sustainability, (iii) strengthening of research and putting education for sustainability research at the same scientific level as other areas of knowledge and university departments.”

Mercè Junyent,
Universitat Autònoma de Barcelona

“This group provides opportunities for underpinning the professional development of the partners: being part of a team, being connected, developing competencies in Education for Sustainability through participation in meetings, WG conferences, sharing resources and information, and through direct engagement with the work of the Working Group. Apart from this, it helps to develop new ways for motivating and empowering academic and administrative staff in our universities.”

Aitxiber Zallo, Universidad del País Vasco /Euskal
Herriko Unibertsitatea

7 OUTCOMES

The three principal outcomes generated by the *Curricula and Sustainability Working Group* in the form of documents (corresponding to the key questions formulated above) are the following:

- 1) CADEP-CRUE (2012) *Approaches for the Introduction of Sustainability in the Curriculum*, update of the institutional statement approved in 2005.
- 2) *Seminar on Research into Environmental and Sustainability Education*, from the inter-university scope in CENEAM, Valsain
- 3) Course “Introduction of Sustainability into University Teaching”.

Other important outcomes of the WG include:

- Producing explanatory documents on sustainability in the curriculum (two videos and a covering letter)
- Preparing the *Guidelines for Sustainability in the Curriculum* (CRUE 2011)
- Conducting a Teaching and Research Inter-university Network Project into Education for Sustainability (RIDIES)
- Running a Teacher Training Course: *Introduction to Sustainability in University Teaching*, aimed at all Spanish universities
- Holding an annual seminar on research in education for sustainability within the university context, in collaboration with the National Environmental Education Centre. And organising symposia within the framework of international and national congresses.

Image of one of the monthly Online meetings of the “Curricula and Sustainability” working group (CADEP-CRUE)

The screenshot displays a virtual meeting interface. On the left, a grid of video thumbnails shows participants. The central window displays a document titled "Orden del día 13 marzo 2015.pdf" with the following agenda items:

1. Aprobación, si procede, del acta de la reunión virtual del 6 de febrero de 2015.
2. Aprobación formal del documento de institucionalización del AgS que ya se remitió a la CADEP para su inclusión y aprobación en la reunión de 27-28 de mayo en León.
3. Seminario de investigaciones en Educación Ambiental y Educación para la Sostenibilidad, de ámbito interuniversitario en el CENEAM, Valsain, nueva fecha 22 a 24 mayo de 2015. (Coordina M^a Angeles Murga, UNED).
4. Aportaciones realizadas por nuestro grupo a "Propuesta de herramienta de autoevaluación de la sostenibilidad universitaria" que ha elaborado el grupo de Trabajo GESU de CADEP-CRUE.
5. Seguimiento de asuntos en ejecución:
 - o Seguimiento del Simposio invitado: La Sostenibilidad en la docencia universitaria, en el III Congreso internacional de Educación y Desarrollo, a celebrar en San Sebastián en 2015 (Angel Ull, UV).
 - o Información sobre Jornada de Sostenibilidad de la UEM prevista para 28 mayo de 2015 (informa Silvia Lavandera, UEM)
 - o Seguimiento participación en proyecto Erasmus Redes UE4SD (Informa Aitxiber Zallo, EHU, UPM)
6. Decidir fecha y orden del día de la próxima reunión virtual del grupo.

On the right, a "Lista de asistentes (17)" lists participants such as Antonio Navarro UCA, Ángela Benito (ISAL), and others. A chat window at the bottom right shows messages like "desconectado, para no interferir" and "Buenos días!".

- Submission of a joint research project involving the majority of universities in response to a call issued by the Ministry for the Economy and Competitiveness aimed at fostering sustainability (environmental, social and economic) from an institutional commitment to university social responsibility.
- Publications in leading journals by members of the project teams.

▼ Image of a video made by “Curricula and Sustainability” working group talking about Sustainability and curricula.



Acknowledgments

We would like to thank the Sustainability and Curriculum Working Group for its contributions to help prepare this case study and particularly Dr. Pilar Aznar (Valencia University), Dr. Angels Ull (Valencia University) and Dr. M^a Angeles Murga (National University for Distance Education) for their extensive input in its development.

Further information:

Curricula and Sustainability Working Group Website:
<http://www.crue.org/Sostenibilidad/CADEP/Paginas/default.aspx?Mobile=0>



CADEP-CRUE (2012) Approaches for the Introduction of Sustainability in the Curriculum, update of the institutional statement approved in 2005:
<http://www.crue.org/Sostenibilidad/CADEP/Paginas/Documentos.aspx?Mobile=0>



Course “Introduction of Sustainability into University Teaching” (pdf in Spanish):
http://www.crue.org/Sostenibilidad/CADEP/Documents/Formación/CURSO_FORMACION_CADEP%202014.pdf



Curricula and Sustainability Working Group Report (pdf in Spanish):
<http://www.crue.org/Sostenibilidad/CADEP/Documents/FICHA%20GRUPO%20SOSTENIBILIDAD%20CURRICULAR%20Marzo%202015.pdf>



Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



7/ Learning for Sustainable Futures: ESD professional development at University of Gloucestershire, UK

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1 OVERVIEW

The *Learning for Sustainable Futures* (LSF) scheme at University of Gloucestershire provides professional development in ESD for both teaching staff and staff who support student learning. It enables staff to develop the curriculum and to improve teaching practices as well as students' professional skills in ESD. Staff from any academic faculty or professional department can propose project concepts through an annual competitive process. The successful proposers receive £2500 to lead and develop their projects, as well as mentoring support, tailored ESD guidance, resources, training and networking opportunities.

LSF is supported by the University's senior management as part of the implementation of the *Learning and Teaching Strategy* and commitment to ESD in the *Strategic Plan 2012–17*. It is part of the institutional strategy for embedding ESD across the curriculum, student experience, quality enhancement and corporate practices. The scheme is co-led by the Sustainability Team and Academic Development Unit and has received £50,000 of central University funds. This investment has been provided over a 3 year period and has supported 20 projects in total, with the 4th cycle starting in 2015–16. The LSF Scheme also won Highly Commended at the UK 2013 *Green Gown Awards* for its strategic approach to ESD professional development.

2 PROFESSIONAL DEVELOPMENT PROCESS

Why we use this process:

LSF develops the understanding and capabilities of staff in ESD, so they can improve student learning experiences. Projects use pedagogical inquiry and are action-focused; they are not about researching ESD, but bringing ESD into the thinking and practice of teaching teams and professional departments. LSF helps to build the skills of staff to be catalysts for change and show leadership for ESD in their own faculties and departments.

How the process works:

Project leaders work to an agreed project plan for one academic year, with one-to-one (1-1) mentoring meetings each semester, fo-

cused on action learning and change outcomes (Figure 4.8). Visiting scholars and interaction with colleagues working on ESD at other universities are built into the process, to extend opportunities for professional exchange, reflection and dialogue. Staff are also supported through the expanding network of LSF project leaders across faculties and campuses, which encourages interdisciplinary dialogue and helps to ground ESD practice more deeply across the institution.

What is asked of participants:

Project leaders engage with the professional development process by: developing their project plans in agreement with their head of department and involving relevant colleagues in the process; participating in 1-1 mentoring meetings and engaging with relevant ESD literature; preparing a brief final report and sharing their experiences and outcomes at the annual LSF conference. Some project leaders have written up their project results and professional reflections as case studies, as part of their postgraduate training to gain nationally recognized teaching qualifications for higher education.

3 ESD FRAMING

The LSF scheme uses the University's existing ESD guidance framework to guide their projects, which is based on ESD approaches adopted for the UN Decade of ESD (2005–14). The framework focuses on five pedagogical principles that are easily adaptable for different areas: *futures thinking*; *critical and creative thinking*; *participation and participatory learning*; *systemic thinking*; and *partnerships*.

LSF specifically avoids supporting the design of special modules or courses; instead it promotes 'programme-wide' approaches to ESD that aim to reframe the whole curriculum, or projects that pilot an approach and then extend it more widely. It also supports projects that bring ESD thinking and practices into the core work of education and learning support services. This ensures that student learning experiences in ESD are better connected at all levels of study and with their future professional capabilities and roles.

LSF recognizes that for effective changes towards ESD, educators need professional de-

velopment opportunities to help them rethink both teaching approaches and curriculum design. This requires that they engage with ESD pedagogy and best practice; translate it into their own subject areas; and learn change and leadership skills to embed ESD into teaching programmes and departmental practices.

4 KEY QUESTIONS

The issues and challenges that LSF addresses are:

Q: How can we scale up ESD practice institutionally with only modest investment of resources?

Q: What kind of professional support in ESD will work well for both academic and professional staff?

Q: How can we support ESD innovation in subjects or departments with no prior background in ESD?

Q: What approaches will show how ESD can inform both the formal curriculum and co-curriculum?

5 PRACTICALITY

The key lessons learned from the LSF scheme are:

- ESD professional development works best with regular face-to-face dialogues and interactions that help staff to build their understanding and ownership of how ESD can change education experiences.
- Colleagues working under pressured and changeable conditions need to work to simple, shared plans, with the flexibility to adapt to new opportunities and unexpected developments.
- Following up with personal support for participants at regular stages in the development process helps to keep their interest and confidence alive to ensure stronger outcomes.
- Collaborative approaches that involve the teams that are responsible for professional development will help to embed new ESD practices into institutional education thinking.
- Communicating about the initiative with

DIAGRAM

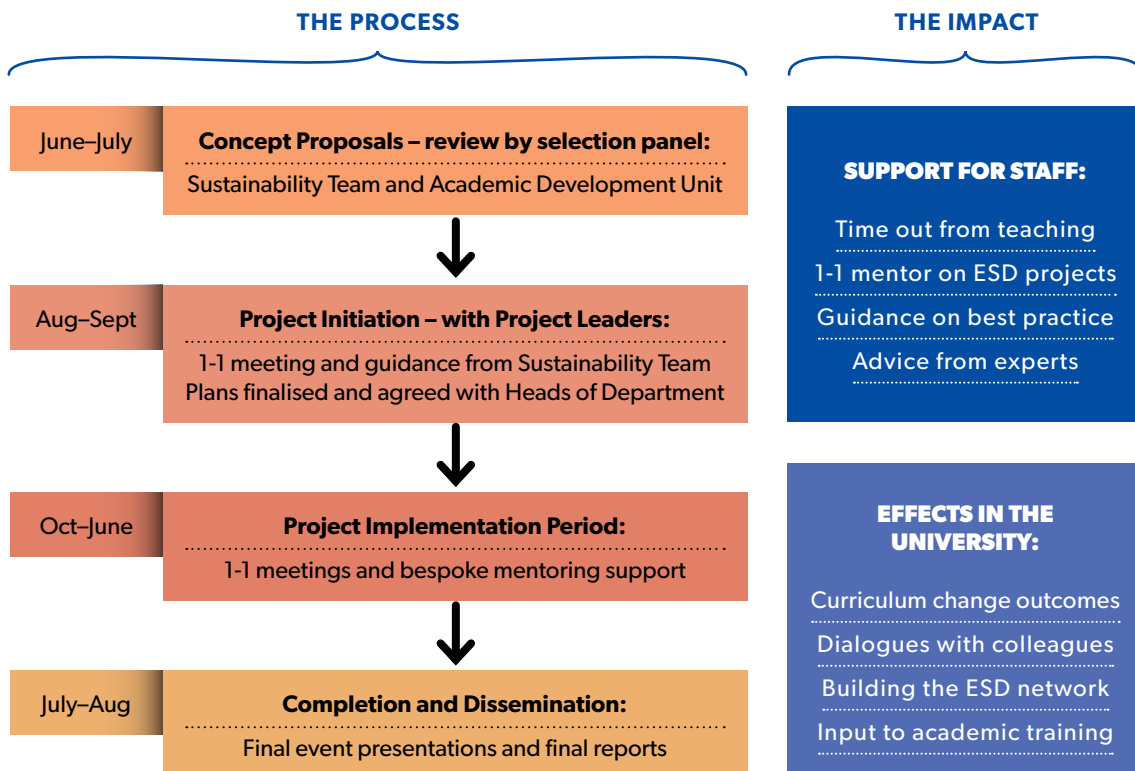


Figure 4.8 – The process and impact of the *Learning for Sustainable Futures* professional development scheme at University of Gloucestershire, UK.

senior managers and external partners helps to build interest and critical support for ESD at the strategic level.

6 REFLECTIONS OF ORGANISERS AND FACILITATORS

Support from senior academic leaders has been key to the success of LSF – and this has developed through positive feedback from staff who have experienced successful professional development journeys. This led to the commitment of further funds for three years after the initial pilot year of LSF.

The approach has been to select projects with best potential for achieving tangible changes and for transfer of insights to other departments, and projects with large course groups that can extend ESD more widely across core undergraduate experiences. It has also been important to support activities that connect with institutional priorities and help to add value and impact in those areas.

“LSF involves our staff with ESD in new and practical ways, enabling them to forge connections with their subjects, explore ideas with colleagues in other disciplines and engage their teaching teams and heads of department with the aims of ESD. Our institutional investment in providing seed funds, professional mentoring and staff time to support this process should pay dividends, helping to integrate and build capacity for ESD, to realise our Learning and Teaching Strategy, and to motivate and energise staff for research-informed teaching, particularly for junior staff and areas with less history of this kind of curriculum innovation.”

*Professor Stephen Hill,
Dean of Teaching and Learning Innovation*

The mentoring support for staff has to both encourage and stretch them, to help them internalize and adapt ESD ideas and approaches. It has to connect with their current priorities or concerns for improving student learning, their own academic expertise and ambitions, and professional or industry contexts.

To achieve these aims, mentoring discussions need to help colleagues to identify the relevant entry points for their specialism and explore different ways to change their pedagogy, to engage students more effectively with ESD learning processes.

“When we work with those colleagues who are leading LSF projects, we need to build on their expertise in the

specific academic discipline or professional area, but also challenge them to rethink and to innovate in their teaching practices by acting as the ‘critical friend’. This is an important, exciting but complex mentoring process, as we need to be conscious of the multiple challenges they face in trying to absorb ESD ideas, reframe existing schemas, introduce new approaches and become change agents in their area.”

*Dr Alex Ryan, Associate Director
of Sustainability (Academic) – LSF Scheme Lead*

7 REFLECTIONS OF PARTICIPANTS

LSF project leaders highlight the way that the mentoring helps them to engage in reflective dialogue and a process of inquiry and reconstruction of their teaching and learning approach. They explain the value of these dialogues in helping them to adapt ESD principles to suit the focus of their subject area, to refresh the pedagogies they use, and to meet the needs of the particular programme and their institutional context:

“The LSF project has empowered me to experiment, to reflect and to refine my approach to teaching and learning. The network of experts I have been exposed to has been invaluable; there is always somebody to discuss ideas and issues with. I’ve only recently made the move to HE from a career in professional practice so it’s great to have this wealth of experience at my fingertips and this curriculum development work is now the case study for my MSc dissertation.”

*Michelle Cook, Lecturer in Accounting
and Finance – LSF Project Leader*

“The 1-1 support during module development was invaluable, willingness to act as a sounding board allowed me to work through a number of interesting and thought provoking ESD concepts in a challenging but importantly constructive mentoring relationship.”

*Ben Moreland, Lecturer in Sport
and Exercise – LSF Project Leader*

“Regular mentoring was invaluable in helping me to see how my discipline aligns and connects with ESD in ways I had not previously considered, clearing away the fog and seeing things in a practical, focused manner that eased my way in the movement from abstract and theoretical to real and concrete results.”

*Dr Roy Jackson Reader in Philosophy
of Religion – LSF Project Leader*

External participants who have acted as visiting experts and collaborative partners in the LSF scheme have contributed to the professional dialogues at events and have also provided significant inspiration and input to specific LSF projects. These colleagues have also benefited from this process and found LSF valuable for their professional development and their ongoing work at other institutions:

“I found the meetings and conversations on ESD most engaging. They helped me to reflect critically on my own work. It was interesting to see how they gave each person space to shape/clarify/extend his/her understanding of ESD, remaining open to others’ conceptualizations and starting points and pulling the conversation together so a deeper sense of ESD was reached. I think these conversations are important in enabling staff to engage with ESD – an approach that should be developed and shared.”

Dr Lorna Down, Senior Lecturer, University of the West Indies – LSF visiting scholar/mentor 2013

“Lots of different ideas/suggestions emerged which prompted me to reflect on our practice and the issues we face. I am increasingly aware that I need to know a lot more about psychology and change management if I am

going to be more effective in promoting ESD. I like the conversational and relaxed atmosphere, the inputs were interesting and organization was excellent.”

Stephen Scoffham, Principal Lecturer, Canterbury Christ Church University – LSF external partner 2014

8 OUTCOMES

LSF works with a systemic model of change, aiming to connect and influence across the levels of the university. It views project leaders as change agents for ESD in their teaching teams, among student cohorts and with wider professional networks and industry partners. The scheme has been critical to scaling up ESD activity across the University, engaging staff and building executive support for ESD.

The LSF projects have led to the integration of ESD in professional practice and social learning for staff and students in several University departments: *Student Union; Chaplaincy; Placements; Libraries and Information Services; Student Helpzones*. They have also changed the curriculum in: *Accounting and Finance; Business*



Management; Early Years Education; Education Studies; Fashion Design; Fine Art; Tourism Management; Philosophy and Religion; Product Design; Sports Coaching; Sports Development. The projects have led to departmental action plans; student workshops and events; learning activities and assessments; curriculum enhancement plans; departmental training workshops; quality assurance documents; and new teaching tools.

The LSF scheme is also changing University academic practice as it features in central academic training programmes and online staff development resource toolkits. The Academic Development Unit offered to sole-fund the scheme during its third year and the quality enhancement team is now using LSF case studies as examples of best practice in HE teaching and learning, which was recognized in the institutional external quality assurance review in 2015. Connections have been made between projects and for institutional development, e.g. to inform curriculum strategy in the restructure of the Business School, and to establish training in ESD provided by the Student Union, for all student course representatives across faculties.

Unexpected outcomes include significant interest and regular collaboration from local tertiary colleges and universities. The University of Worcester has also replicated the LSF model for ESD development at their institution. LFSF events have extended networks and dialogues in ESD by involving participants in the UK and from countries such as Australia and the USA.

Further information:

Further information about the scheme can be accessed via:

<http://www.glos.ac.uk/sustainability/>



Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



8 / ISDE: Informal teachers' network for mutual support in ESD, Bulgaria

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1 OVERVIEW

The *Initiative for Sustainable Development Education (ISDE)* at the University of Architecture, Civil Engineering and Geodesy (UACEG) in Sofia is an **informal teachers' network** intended to identify and coordinate existing interests and teaching capacity with regard to sustainable development (SD) throughout the five faculties of the University (Architecture, Structural, Transportation and Hydraulic Engineering, and Geodesy) in order to provide mutual support for university teachers in educating students and to self-educate themselves in the SD field. The idea is to empower a value-based academic community for creatively integrating the SD concept into the professional practice of planners, architects and civil engineers. The initiative is aimed at going beyond limited technocratic approaches and jointly developing the interdisciplinary competences needed for integrating the SD concept in higher education. It is also expected to help teachers from the five faculties in overcoming administrative barriers and organizing efficient collaboration between disciplines.

Three members of the academic staff initiated the process in late 2011, and over a period of three years the group grew to 12 teachers and PhD students. As the university authorities felt uncomfortable about formalizing the initiative, the ISDE decided on remaining open to all interested and motivated teachers of the university but remaining strictly informal and without the ambition of becoming a fast-growing or institutionalized one.

2 PROFESSIONAL DEVELOPMENT PROCESS

Why we adopted this process:

The initiative resulted from the growing awareness about the complexity of the SD concept and the obvious gap between the responsibilities of higher education and teachers' existing capacity to adequately interpret the emerging interdisciplinary issues in the - boundary areas not only between different planning and engineering disciplines but also with the social, cultural and economic fields. The teachers' Initiative for Sustainable Development Education at UACEG was motivated by a sequence of academic activities that brought together teachers from different disci-

plines and faculties and outlined the need for teachers to urgently acquire specialized education for sustainable development (ESD). In 2002, a study on construction and demolition waste recycling in the country's towns that were undergoing reconstruction proved the effectiveness of teachers' research in developing interdisciplinary capacity for SD at the university. The process was further encouraged by the positive teaching experience within two SD teaching modules in the newly established Programme in Urbanism at the Faculty of Architecture where interdisciplinary approaches were both needed and welcome (Dimitrova, 2014). A subsequent research project in 2010/2011 provided for a study on how the faculty curriculum addresses the SD topic and how first year students in different faculties rate the importance of the SD concept (Dimitrova et al, 2011). It also identified key ISDE target groups. The ESD Initiative for the practical support of educators' capacity for teaching in the field of SD was finally initiated by an NGO-led project in 2011, which requested the organization of a postgraduate course in eco-friendly construction with natural building materials at the university. The NGO project was focused on practical skills, yet it acknowledged the need for academic support in providing a broader framework for the activity. The project thus encouraged a proactive attitude to ESD among university teachers and motivated them to organize themselves in ISDE with the goal providing mutual support for teachers to learn about SD. An initial concept for an interdisciplinary postgraduate programme to comprehensively discuss SD aspects in architecture, urban planning and civil engineering was also developed. To date, teachers and PhD students from all five faculties of the university have been contacted and involved in ISDE activities of learning by teaching together.

How the process works:

The process is based on regular informal contacts among teachers for sharing personal experience, addressing issues of practice, research and education in the professional field, and discussing opportunities for practical action to integrate the SD topic within the curriculum. The major foci of the ISDE activities comprise: information exchange; professional debate; mutual teaching support (visiting lecturers, interdisciplinary consultations for diploma and PhD students to clarify cross-disciplinary issues); joint interdisciplinary teaching initiatives at different levels

(including interdisciplinary intensive projects under the ERASMUS+ Programme); small-scale research projects (funded by the university research budget) to address interdisciplinary topics and involving students from different faculties; development of a modular postgraduate programme on SD for practicing professionals (following the Life Long Learning concept) – **Figure 4.9**.

The initial structure of the postgraduate programme was discussed by the members of the group and structured in 5 modular sections (Introduction to SD, Regional Aspects, Urban Aspects, Buildings and Facilities, Planning and Design Tools). The programme will provide general and specialized modules which are supposed to build upon existing professional knowledge and be flexibly combined in order to address issues identified by postgraduate participants themselves in their practical work. As a result of ISDE efforts a new optional teaching module entitled “Improvement of resource and energy efficiency in construction” has been submitted for administrative approval and is planned to start at the Faculty of Structural Engineering in 2015/2016.

What is asked of participants?

The ISDE works as a flexible network in which every teacher from the university is free to join – with personal experience, ideas and questions – some already experienced teachers and others just starting their career in the field of higher education. Colleagues come with ideas and project results of their own as well as contact lists to share and disseminate. Personal motivation is the major element in the process. Participants’ expectations differ but there is a common understanding about the need for collaboration in identifying effective ways for more explicitly communicating SD issues in the teaching process. As there is no separate funding of ISDE activities for the moment, the group usually takes the opportunity to integrate some of the events as part of other projects funded from various programmes.

3 ESD FRAMING

The ISDE provides an academic environment for intellectual debate and pragmatic advice; it supports personal efforts in introducing the SD topic to the various professional fields. Methodological support is pro-

vided for conceptualizing interdisciplinary areas of research and educational interest of the teachers involved – how particular professional topics could be interpreted within the broader context of the SD concept. The topic of building waste recycling provides a good example: in addition to purely technological aspects it needs to be interpreted within the broader spatial planning context of urban regeneration and linked to social and economic considerations. Two ethical principles are considered of key importance: ESD is a value-based process – it should be regarded as a transfer of values as well as knowledge and skills; and ESD is interactive – it is most effective when based on a continual dialogue – among teachers and between teachers and students.

The ISDE initiators and core members are also active partners in different activities (educational as well as research) at the university level. University teachers’ research activities should be considered a major success factor for enhancing their teaching capacity for SD (it is also a way for the newest innovative approaches and achievements to enter the educational process); they should be therefore strongly stimulated and supported at all levels. Participants share contacts and opportunities for a broader interaction with important actors in the SD field outside the university: (a) local and national level institutions in the country; (b) international programmes and networks.

4 KEY QUESTIONS

The core questions addressed by the ISDE relate to the following issues and challenges:

Q: How to enhance professional capacity for identifying and addressing SD issues in the professional field covered by the university?

Q: How could we holistically approach and interpret SD principles in all the disciplines taught in the five faculties within the existing administrative structure and rules?

Q: How to motivate and support teachers for sharing experience and undertaking steps for self-education in the SD field?

Q: How to enable closer professional interaction among teachers while respecting academic autonomy and teachers’ personal values and approaches?

DIAGRAM

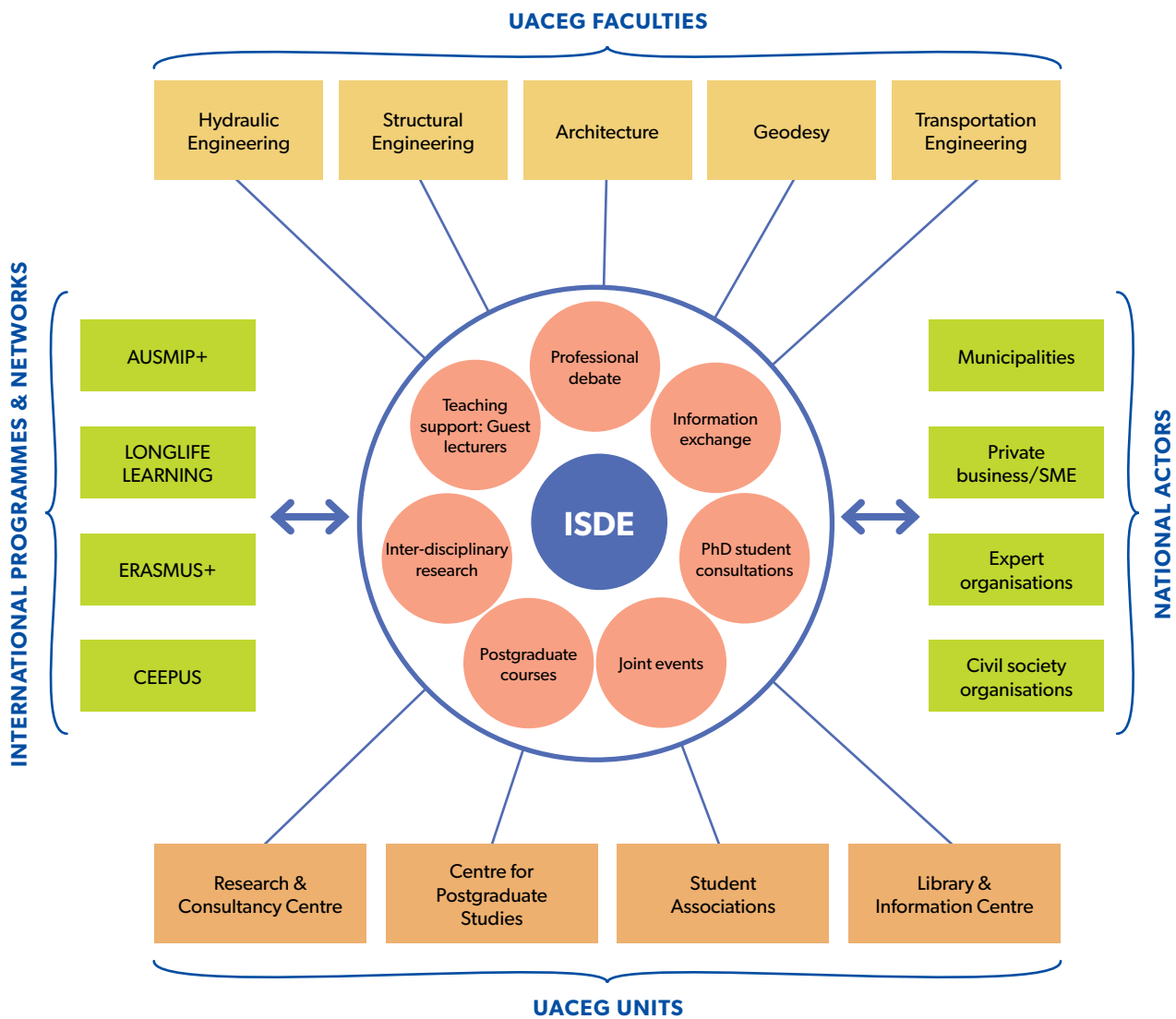


Figure 4.9 – Conceptual scheme of the structure and interactions of the Initiative for Sustainable Development Education (ISDE) at the University of Architecture, Civil Engineering and Geodesy, Sofia, Bulgaria

5 PRACTICALITY

The key lessons learned from the ISDE scheme include:

- A growing number of colleagues appreciate the need for upgrading contents and didactic approaches at the university in order to integrally address SD, yet the explicit focus on ESD is still missing. Teachers' personal value systems and motivation for action are important factors to consider and respect.
- SD education for teachers should not be considered separately from the education of students - both are aspects of an integral cultural change in the university that requires developing creative thinking. The two processes mutually complement each other in order to educate agents of change. Students' questions urge teachers to search for new answers and new approaches. Teachers' sincere commitment to the SD concept makes students more confident about the relevance and importance of the issues discussed.

- Integrating different types of activities helps a lot. Linking teaching to research and to real-life professional practice is important as it broadens the horizon and deepens academic understanding about educational priorities, content and approaches.
- It is important to be sensitive to the local context – both academic and societal. Currently ESD competences could not be in all cases considered a positive factor for career development – on the contrary, working in the boundary areas between disciplines could provide additional difficulties in legitimizing results and thus tends to be a barrier that delays academic career development.

6 THE REFLECTIONS OF ORGANISERS AND FACILITATORS

Introducing efficient education for SD needs a fundamental change in higher education philosophy and in university structure. These are difficult changes to undertake within the current Bulgarian context – whatever is stated in the official institutional documents, the system as a whole is not really eager to change and many people within it feel threatened by change. For many years ‘sustainable development’ was in many ways considered an imported fashionable topic to mask ambitions for questioning the status quo at the university. The situation is nowadays changing fast – EU funding that comes to the country through its Operational Programmes requires explicit reference to the SD contributions of funded projects; thus, claiming SD expertise becomes a point of competition rather than cooperation. The two postgraduate courses delivered at UACEG as a result of the NGO-led project were very important as they responded to a real-life need emerging in practice as required by young professionals themselves; it was also a chance for the university’s teachers to test how the SD message works with a broader professional audience – and was thus a kind of fine-tuning of educational approaches and tools.

“The major challenge we try to address is the duality between general and particular knowledge. When we present general SD principles, there is a reaction from the audience that it is an interesting concept but rather vague and far from everyday professional activity in the construction sector – and difficult to apply in practice; the

moment we go to recommending particular measures, there is the risk of putting the accent on a ‘technocratic’ approach and missing the integrative point of view”.

Roumiana Hadjieva-Zaharieva, PhD, Assoc. Prof., Dpt. Building Materials and Insulations

Our practical experience confirmed that the education of university teachers needs a combination of bottom-up and top-down action. It should be a continual process sensitive to the dynamics of the context and respect a diversity of approaches. Being dialogical with colleagues and institutions and supportive of personal creativity and initiatives are major success factors.

“The idea of ISDE is to provide positive thinking about needed changes, ideas about possible practical realization and encouragement for collaborative action”.

Elena Dimitrova, PhD, Assoc. Prof., Dpt. Urban Planning

The mutually beneficial effects of linking teaching to research should be better analyzed. According to practical experience, university teachers’ research activities should be considered a major success factor for enhancing their teaching capacity for SD (it is also a way for the latest approaches and achievements to enter the educational process); they should therefore be strongly encouraged and supported at all levels. PhD students are potentially important partners in the process as their studies, if properly focused, could provide interesting interdisciplinary perspectives on SD and enrich supervisors’ teaching experience. PhD students are also involved in leading seminars and are potential future teachers at the university as well.

7 REFLECTIONS OF PARTICIPANTS

ISDE has already provided visible results in supporting teachers as well as students in integrally addressing SD aspects in their academic and professional activities.

Interdisciplinary consultations organized by university teachers through ISDE have proved to have a lasting effect on students’ motivation for further involvement in interdisciplinary collaboration addressing SD aspects of spatial planning and development:

“I highly appreciate the chance I had when developing my MSc diploma thesis in Urbanism at the UACEG to take advantage of the interdisciplinary collaboration among teachers. My thesis was focused on the regeneration of large prefab housing estates in Sofia. Addressing the technical issues of building waste recycling in parallel with the social and spatial aspects of urban development appeared really intriguing. It opened up my curiosity for further exploration of the broad spectrum of urban challenges and motivated me to further develop my professional expertise through undertaking PhD studies.”

Silvia Chakarova, MSc in Urbanism, PhD student, Dpt. Urban Planning

Teachers' access to **international interdisciplinary collaboration** in educational and research projects was identified as an important outcome:

“Through the network of informal contacts established with teachers from other faculties of the university I got involved in a number of very interesting international initiatives focused on sustainable development issues. These include a couple of projects within the ERASMUS intensive programme, accomplished by one-week student and teacher seminars for co-learning and the exchange of good practices. As a result of the international cooperation, two interdisciplinary project proposals were submitted in 2014 under different programme calls (Erasmus+ Programme and HORIZON 2020).”

Milena Tasheva-Petrova, PhD, Assoc. Prof., Dpt. Urban Planning

Linkages between teaching and research capacity building for SD are considered to be of key importance:

“An example of successful multidisciplinary collaboration in implementing the SD idea is an on-going research project dealing with an information system model for expert seismic risk evaluation. The holistic earthquake risk estimation is based on the joint efforts of civil engineers, cartographers and GIS specialists. The first phase of this project could be considered a successful and optimistic step towards the education of educators and students in the light of SD ideas”

Mihaela Kouteva-Guencheva, PhD, Assoc. Prof., Dpt. Computer-Aided Engineering

Self-education through interdisciplinary research has been highly rated:

“Though sustainability is a broad concept, it is not an abstract idea for better living, but rather a set of real parameters that can be measured, analyzed and improved. The key for a good understanding of sustainability is the

communication and exchange of experience. The contacts within ISDE gave me a better understanding of the problem as well as the opportunity to participate in a PhD mobility programme regarding sustainability of building materials.”

Yana Kancheva, Senior Assist. Prof., Dpt. Descriptive Geometry and Engineering-Constructive Graphics

8 OUTCOMES

The ISDE has provided an increasing number of teachers at UACEG with information on ESD, with the opportunity for critical debate and with a supportive environment for upgrading educational contents and the approaches taken within their teaching modules in order to integrate the SD perspective in particular professional fields. ISDE activities are all voluntary; the idea of the initiators was to ‘legitimize’ the initiative by making it visible and necessary. It was not a linear process of success. Some colleagues initially were eager to join, then withdrew – either because they found it difficult to integrate within an informal group questioning many established teaching approaches or because they were afraid of somebody trying to invade their established fields of expert competence. For the moment it seems that keeping the ISDE process collaborative and synergetic – not a competitive one – is the key aspect to guarantee its own continuity and sustainability.

As the SD topic is now becoming more and more popular in the region of South-Eastern Europe (SEE) – a lot of interest is being attracted by EU funding coming through the Operational Programmes, where addressing SD issues is a major requirement for a successful funding application. There is lot of SD focus in on-going and advertised events and initiatives. It is also important to distinguish between really effective approaches and ‘green-washing’ activities.

Much broader interdisciplinary competence of teaching staff is still needed; technical experts and experts in sociology and cultural studies could learn to better interact with each other. Young professionals who are competent in the SD field should be encouraged to apply for academic positions and later on be supported to creatively implement their knowledge and develop their ESD competences. Continual action research is needed

in order to conceptualize success factors and barriers and undertake relevant action (periodic qualification courses, specializations, etc.) for enhancing teachers' creative competence in the SD field.

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Further information:

Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



9/ LEUPHANA SEMESTER: ESD professional development module on Responsibility and Sustainability, Germany

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1 OVERVIEW

Once a year, the module Responsibility and Sustainability provides a three-day workshop to help prepare its teaching staff for the challenges of delivering this module. A major difficulty is for lecturers to combine Education for Sustainable Development (ESD) with the didactic approach of undergraduate research, which introduces students to academic research in an interdisciplinary field. The module Responsibility and Sustainability, which is part of the first semester Bachelor program at Leuphana University of Lüneburg, introduces all students in the first semester to ESD through project-based seminars.

The module's teaching staff is made up of both professors and lecturers from Leuphana as well as external university lecturers. The workshop has been initiated to develop a culture of collaborative teaching and learning that enables lecturers to improve their didactic competences and to engage in a reflective dialogue on the experience of leading research-based seminars for undergraduates.

The workshop is co-developed and implemented by the UNESCO Chair in Higher Education for Sustainable Development together with Leuphana College. Over the last few years, it has been partly financed by the Lüneburg Innovation Incubator.

2 PROFESSIONAL DEVELOPMENT PROCESS

Why have we initiated a professional development workshop for our teaching staff?

The lecturers for the Responsibility and Sustainability module face big challenges as both this module and the structure of the Leuphana Semester are unique within the German academic system. The module provides the basis for a bachelor's education that focuses on key competences and considers *Gestaltungskompetenz* – all of the knowledge and skills needed to help shape sustainable development – as a crucial goal of education.

The module is targeted at the 1,500 first year students at Leuphana University with the goal of giving them an insight into the main issues of sustainable development on an academic level. The module is part of an interdisciplinary introduction to research, the so-called *Leuphana Semester*.¹ This concept has been influenced by the Anglo-American 'College' concept. In addition to subject-based learning, the concept encourages the development of interdisciplinary perspectives and key competences. The College is conceived of as an institution that helps young people manage the transition from school to university by stressing personality building, critical thinking and democratic citizenship.

The Responsibility and Sustainability module provides 60 project-based seminars, each for 25 participants. The students gain an insight into selected issues in sustainable development and have their first experience in undertaking academic research. They work both in interdisciplinary teams and independently to develop hypotheses and carry out their own small-scale research projects, presenting their results to a wide academic audience at the Leuphana Conference at the end of the academic year.

Examples of Project-based Seminars in the Module

- CSR: Charming, sexy, revolutionary? – Tracking suspicious cases of Corporate Social Responsibility.

- Tourism in Africa under Conditions of Globalization
- Environmental Justice and Sustainability – Challenges and Opportunities for Developing Just Sustainabilities
- Giving 2.0. Sustainable lifestyle or a way to survive?
- Using instead of owning – A sustainability project aiming to develop a toy library in Lüneburg
- What? You've never been to London? Mobility between everyday life and exceptional experience
- Sustainability in the Urban Development and Regeneration Planning – Using the Example of "HafenCity Hamburg"
- Europe's frontier of global change: Sustainable development in the Saxon area of Transylvania (Romania)
- What Makes Life Good? Citizens and students tracing an idea.
- Biodiversity – research and practice for a modern civil society

For the lecturers this format of project-based seminars involves conceptual and didactic challenges which are unique in the context of the German university system. The shift from teacher-centred to learner-centred paradigms cannot be accomplished in a standardized way. Thus, the workshop provides an important space for lecturers to both analyse and improve the innovative teaching and learning methods required for the Responsibility and Sustainability module.

What is the concept of the professional development workshop?

The three-day workshops are designed to address the challenges of the project-based seminars, as the diagram in **Figure 4.10** shows. Besides acquainting participants with the general structure of the module, the workshops focus on five major topics:

- The idea and practice of undergraduate research
- Planning interdisciplinary project-based seminars for students
- Developing participatory methods of moderation
- Didactic challenges of ESD

¹ The Leuphana Semester includes two more interdisciplinary modules: The Humanities module stimulates student curiosity for the arts and humanities while introducing them to the standards of academic research. The Methods I module examines the difference between everyday knowledge and academic knowledge and explores the methodological identities of different academic fields. It also provides a basic introduction to statistical methods and mathematics. Two subject-based modules introduce students to the contents and methods of their major field of study.

- Main issues and contents concerning the annual module theme (e.g. justice, “the good life”, transformation).

Different formats are used in order to collect both the innovative ideas of new lecturers and the wide experience of those who have already taught the module. Discussions, expert input, world café dialogues and cooperative consulting are ways to extend opportunities for collegial exchange, interaction, and reflection. Participants read a number of key texts in advance and then in the workshops, if needed with other material, work intensively to develop their seminar concepts for the module.

About 30 participants attend each preparatory workshop for the Responsibility and Sustainability module, which amounts to 50% of the total number of lecturers teaching the module in any given year. However, nearly all module lecturers have attended the workshop at some point in time. The invitation to the workshop is extended in the call for proposals for the module seminars and is free of charge.

3 ESD FRAMING

The Responsibility and Sustainability module combines two major goals: to provide students with key competences and life skills and to enable them to actively participate in political and civic issues. *Gestaltungskompetenz* is the driver for an individual’s creative and forward-looking participation in sustainable development. This competence involves the ability to understand both the potential and limitations of future thinking. The lecturers in the module have different academic backgrounds (both natural and social sciences) and each of them focusses on one special problem within the wider context of ESD. At the same time, all of them consider the major goals of the module as a framework for their teaching. Thus, each lecturer introduces the students to one certain topic as an example of ESD while always considering the context of ESD as a whole. The interdisciplinary approach is of great importance for the lecturers, especially when contextualizing their topics.

What contribution can Higher Education for Sustainable Development (HESD) make to undergraduate research? In this module students experience research as a cycle which

begins with the independent formulation of questions in the field of sustainable development, then involves the selection of methods to answer those questions, and finally develops ways of presenting their results.

This module is inspired by the Humboldt model of education. Though much of the time students work independently, they also learn to cooperate and work in small groups as their research involves a cognitive interest that is potentially relevant for others. Higher education thus provides a protected space for independent reflection. This is crucial for students if they are to engage in critical thinking and develop the ability to actively meet the challenges of the 21st century.

4 KEY QUESTIONS

The issues and challenges that the workshop concept addresses are:

Q: How can undergraduate research be integrated in the learning experiences of first semester students?

Q: How does HESD relate to the standards of a humanistic education?

Q: How can the particular learning experiences of students in the project-based seminars be connected with the general idea of sustainable development?

Q: How can lecturers who are disciplinary experts best learn interdisciplinary teaching strategies?

Q: How can both internal and external, young and experienced lecturers be inspired for the concept of the module?

5 PRACTICALITY

The key lessons learned from six years of experience with this workshop are:

- The teaching experience of the lecturers is a valuable resource for providing them with opportunities for networking and sharing experience.
- The ideas and insights of new colleagues are important for creating a collaborative culture of teaching and learning. A friendly and welcoming atmosphere is essential for integrating new colleagues into the module.

COLLABORATIVE CULTURE DIAGRAM

CULTURE OF TEACHING AND LEARNING IN THE RESPONSIBILITY AND SUSTAINABILITY MODULE

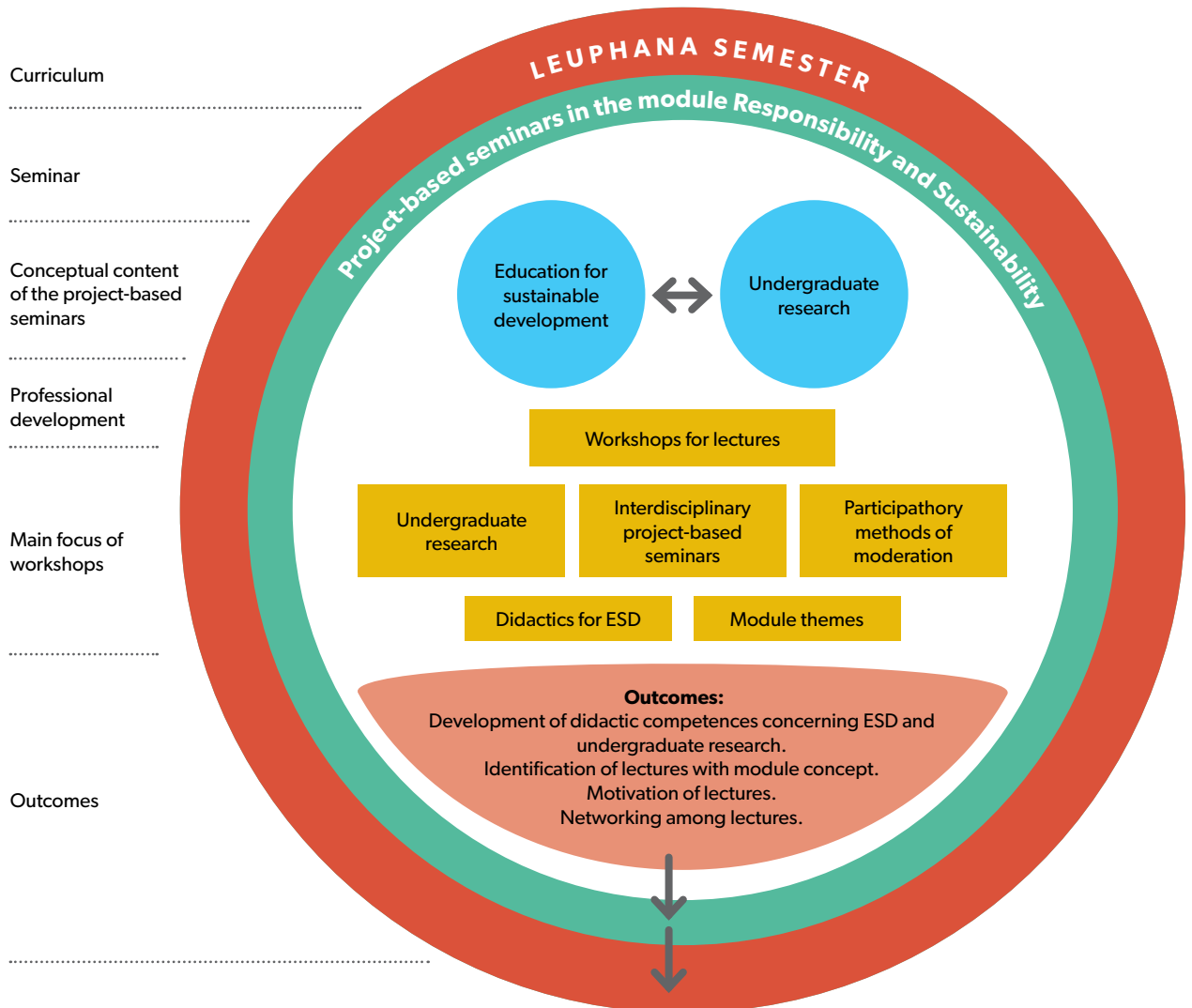


Figure 4.10 – Culture of teaching and learning in the Responsibility and Sustainability module, Leuphana University of Lüneburg

- Many lecturers like controversial debates. This needs to be recognized and given enough time and space in the workshops.
- An open mutual exchange is crucial to maintaining a team-building atmosphere among university lecturers.
- An inspiring and motivating atmosphere promotes focused work and the development of team spirit. Locations off campus have proved to be more appropriate for the workshops than locations on campus.

6

REFLECTIONS OF ORGANISERS AND FACILITATORS

Sustainable development is a key element of the vision of the Leuphana University of Lüneburg. To become deeply embedded and widely accepted, sustainable development needs institutional grounding. The Responsibility and Sustainability module introduces higher education in sustainable development at the very beginning of the students' aca-

ademic career and thus strengthens the overall sustainable development strategy of the university. The module lecturers are the most important partners in developing this innovative culture of learning as they are in direct contact with the students and in charge of the seminar contents. Thus, the chairpersons of the module consider the exchange among lecturers through professional development as crucial to introducing and further developing sustainable development in higher education.

“The lecturers enrich their own personal development at Burg Lenzen (note: the workshop location) through high motivation and competence, which is a great resource for Leuphana: The discussions have proved that we do not only teach sustainability. The personal development workshop itself can be defined as a sustained and lasting experience. This is profitable for both lecturers and students.”

Prof Dr Kai Niebert, Visiting Professor at the Faculty for Sustainability at the Leuphana University of Lüneburg and Professor for Natural Science Didactics at the University of Zürich

“I was most impressed by the variety and creativity of the lecturers’ seminar concepts. A wide spectrum of sustainable development is provided for the students, which is also profitable for Leuphana: We can work together as an academic community and develop a culture that considers sustainable development as a major principle.”

Irmhild Brüggem, The President’s Representative for Green Issues, Leuphana

7 REFLECTIONS OF PARTICIPANTS

The module lecturers appreciate the friendly and welcoming atmosphere of the personal development workshops. In their opinion this opportunity for personal development shows them that their work is appreciated. The feedback reveals that they especially like the new and stimulating ideas exchanged in the workshop and the collaborative culture of this learning community. Most of the lecturers take part in regular and lasting networking activities resulting from the workshop. For example, a group of younger lecturers has established a regular informal meeting in order to share teaching experiences and to consult each other during the semester.

“After the personal development workshop, the formerly heterogeneous group of external and inter-

nal lecturers has grown together. It has turned into a community of practice, with didactically innovative sustainable development in higher education as a mutual aim. [...] This very much supports the quality of the module and has a certain influence on the students. Thus, it grounds and supports the Leuphana Semester, an inter – and transdisciplinary experiment that is unique in Germany.”

Mandy Singer-Brodowski, External Lecturer and Research Fellow at the Wuppertal Institute for Climate, Environment and Energy

“I remember both the friendly get-togethers and the very good and practical preparation for our work in the seminars. [...] I found it most helpful for my own seminar concept to get to know experienced lecturers and to work on the concepts in teams.”

Matthias Fischer, Research Fellow at the Institute for Sustainability Communication, Leuphana

“At Burg Lenzen, I got the opportunity to meet other lecturers and to have an intensive exchange during the three days. This exchange has been kept up for several years now and has turned out to be very enriching and productive. [...] Additionally, the workshop helped me to get to know and to reflect on the complex structures and contents of the module in a friendly and pleasant atmosphere.”

Liselotte Hermes da Fonseca, External Lecturer

8 OUTCOMES

The most important finding during the past six years has been that the creation of a collaborative culture of teaching and learning in the module seminars is not the only goal of the personal development workshop but that the workshop itself has become a community of teaching. In addition to the development of didactic competences concerning undergraduate research and sustainable development in higher education, three major results have been achieved: First, the workshop fosters strong identification by the lecturers with the ideas and didactic approaches of the module. Second, the workshop is able to make use of the extraordinary motivation of the lecturers and leads to the creation of lasting networks. Third, although progress has been made in changing the understanding of the role of module lecturers from “teacher-centred” to “student-centred”, it remains a great challenge for many to become a facilitator who supports the process of

self-directed and independent student learning. This paradigm shift cannot be achieved in a standardized way but instead it involves collaborative exchange among colleagues. This is being taken into account in the planning for next year's workshop, which will more intensively support this process.

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Further information:

Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



10/ Innovation Projects for Sustainability: ESD professional development grant scheme, University of the Basque Country

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1 WHAT AND WHY

The University of the Basque Country (Universidad del País Vasco/Euskal Herriko Unibertsitatea, UPV/EHU) states in its Strategic Plan the aim “to foster equality and development for sustainability by means of its inclusion in the university curriculum, both in its research and educational aspects”. In this context, the *Innovation Projects for Sustainability* grant scheme emerged which seeks to

support academic staff projects that allow the university to be an active agent for change for sustainable human development.

The aim of the *Innovation Projects for Sustainability* scheme is to foster projects that promote sustainability culture at the University of the Basque Country by means of awarding grants to design and develop innovative projects that propose changes to the curriculum or management that are directly applicable to the university itself. It also encourages staff to

actively engage in interdisciplinary groups, presenting their own projects in the context of ESD and thereby promoting a change towards a more collaborative way of working and learning.

The educational approach of the *Innovation Projects for Sustainability* is not limited to disseminating knowledge on the environment, but rather it focuses on developing staff capacity for transforming educational practices for sustainability by encouraging staff and students to take part in practical hands-on projects. The key focus of these projects is on staff-student collaboration and on ensuring that graduates obtain the necessary skill-sets to achieve an alternative (sustainable) future.

The project teams are made up of university staff (research and academic staff and/or service and administrative staff) and students. The themes tackled are diverse: projects related to teaching students from different university degrees about organic horticulture in a community vegetable garden, open knowledge, renewable energies, service-learning methodologies for current youth problems, future challenges and urban community participation etc.

The grant scheme contributes to the professional development of university educators in ESD via community- and experience-based learning; such a learning context for the students means that the teacher also learns.

2 KEY QUESTIONS

Q: How can academic staff be brought on board to reflect upon Education for Sustainable Development and the university curriculum, along with the environmental management practice of the Campus?

Q: How can change be driven to deliver a more collaborative way of working, sharing the knowledge thus generated, along with the obstacles/lessons learnt?

Q: How can impetus be given to another way of teaching where we all learn?

Q: How can projects be generated that puts students at centre stage?

Q: How can the ESD experience/reflections/obstacles be transferred to the university community?

▼ *One of the supported projects - the Organic Vegetable Garden Project: Setting up an organic vegetable garden near a social canteen for teaching practice to students of various subjects attending various studies. The social canteen is in the background.*



3 WHEN AND WHO

The funding organisation behind the grant scheme is the Vice-Rectorate for Students, Employment and Social Responsibility of the UPV/EHU. Two rounds of project calls have already been issued as part of the grant scheme.

The Call for the 2013/14 academic year was worth €21,000 and provided funding for 10 projects involving 55 staff and students. The Call for the 2014/15 academic year was worth €17,000 and provided funding for 11 projects involving 69 participants. These funds came from the Social Responsibility Programme of the Basque Government and the University of the Basque Country.

4 HOW

The Vice-Rectorate responsible for the individual calls first selects projects that receive support and funding. It then meets with the teams of the approved projects to analyse/help in their implementation throughout the academic year.

5 CONCLUSIONS

The goal of the grant scheme is to build staff capacity to lead students in a process of finding solutions to current issues and to develop the skills, values and knowledge of graduates needed to realign their practice towards sustainability. The grant scheme therefore supports collaborative work between staff and students.

An example is the Organic Vegetable Garden Project where social topics such as equity and poverty are interlinked with topics of local and organic farming via the framework of a social canteen that stands next to the garden. Staff and student learning is based on local challenges regarding sustainability (organic growing) by joint learning with academic staff and the users of the social canteen, thus helping students to develop a sense of social justice.

Another example is the Open Source Project where students are challenged to design and construct chargers for portable devices using renewable energy and open source energy principles. Such an approach encourages critical thought, the collaborative and participatory learning of students and academic

▼ *Another supported project - the Open Source Energy Project: Design and construction of chargers for portable devices by means of renewable energies under open source energy principles.*



staff, stimulates creativity and envisages different alternatives for the future.

The results of the projects, the lessons learnt and the problems found in the development of the projects are shared among university academic staff as part of an annual semi-

nar. Several projects are then undertaken in different faculties and the results shared with the rest of the university community. This approach promotes the sharing of knowledge and experience acquired during the projects and supports further collaboration.

Further information:

The Innovation Projects for Sustainability grant scheme (in Spanish):

<http://www.ehu.es/es/web/iraunkortasuna/iraunkortasunaren-arloko-berrikuntzarako-laguntzetarako-deialdia>



Annual seminar – programme and presentations from the seminar held on 4 July 2014 where Innovation Projects for Sustainability projects have been presented can be found at (in Spanish):

<http://www.ehu.es/es/web/iraunkortasuna/iraunkortasunerako-hezkuntza>



The Organic Vegetable Garden Project – more about the project (in Spanish and Basque):

<https://huertoecologicouniversitario.wordpress.com/category/diario-del-huerto/>



The Open Source Project – more about the project on YouTube:

<https://www.youtube.com/watch?v=bOz7zIOanXI>
(in Spanish)



<https://www.youtube.com/watch?v=PL84SU3bTI8>
(in Basque)



Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



11/ ISE action research: Reorienting teachers' dispositions towards ESD, Latvia

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1 OUTLINE

Inspired by the initiative of the UNESCO/UNITWIN Chair, Charles Hopkins, a group of committed researchers at the Institute of Sustainable Education (ISE) at Daugavpils University, Latvia, became involved in the global project “*Reorienting Teacher Education to Address Sustainability*” (2004-2014) in 2003, to support ESD in Latvia. The aim was to devel-

op both a vision and a methodological basis for ESD in teacher education. This initiative has successfully inspired staff within the Faculty of Education of Management and Education at Daugavpils University to integrate action research into Bachelors, Masters and Doctoral level study programs.

An initial step by the ISE was to establish the Baltic and Black Sea Circle Consortium in educational research (BBCC) in 2005, which

has developed international cooperation across the region. This created a platform for research and learning, through exchange of experiences and best practices for researchers and experts in education and sustainable development. ISE staff have gone on to develop their theoretical foundations and practical experience in action research for reforming teacher education towards ESD, through a range of activities and connections across projects, using external funding as well as internal collaboration.

2

KEY QUESTIONS OF THE INITIATIVE

Q: What is the value of action research to help integrate ESD in HE programmes?

Carrying out participatory action research related to ESD and implementing the research findings has been an important way of promoting the reorientation of education towards sustainable development. The ISE approach has been to explore the possibilities for using action research as a transformative tool for learning in diverse educational contexts and to extend understanding about ESD and how to integrate it.

The first attempts were made to reshape courses by integrating action research to make the process relevant for the teachers and affirm their right and ability to have a say in matters which affect them, especially in the academy. This helped to identify how ESD is relevant for teachers and for the educational process in Bachelor's, Master's and Doctoral courses. ISE staff did not start with a pre-set research design but allowed this to evolve as the community of practice of students and teachers proceeded to discuss changes in education towards more sustainable aims. This required the teachers to have an attitude of openmindedness and respect for 'not knowing' – liberation from clearcut expectations of where the inquiry should proceed.

Transformations in teacher training towards more sustainable aims and pedagogical approaches begin with the individual teacher, by reflecting on one's experience and engaging in deep thinking. The process begins with questions: 'What do I think/feel/(am about to) do in regard to this issue?', 'What makes me think this way?', 'Why do I feel so?' During the course, practicing teachers and

student teachers are involved in identifying problems and recognizing unsustainability in educational issues in diverse contexts: social, cultural, economic, political and personal. In collaboration with other teachers they looked for solutions and engaged in cycles of reflection and discussion, creating new ways of seeing and making sense of the world and their place in it, which potentially leads them to embrace different ways of being together and in the world. This is a living and emergent process that cannot be predicted in advance, but that changes and develops as the teachers deepen their understanding of the issues at hand, as they develop their capacity as co-inquirers.

Gradually this has moved to the institutional level when teachers are ready to introduce changes in their teaching practice and at the institutional level. Thus, action research has become a tool for changing the dispositions of teachers and effecting classroom and school change. It has helped students to develop a culture and consciousness for critical learning and action where they became active agents of change in developing more sustainable futures. Teachers became engaged in re-evaluation of previously uncritically assimilated assumptions about themselves and about education, bringing ESD ideas into their professional development. This process of engagement in participatory action research has fostered teachers' professional development by developing their competencies of ESD.

Q: How can joint efforts support educational transformations towards ESD?

The ISE has strategic aims to develop scientific and academic activities as well as to foster communication and cooperation at regional, national and global levels. These aims support the ambition of ESD to influence the curriculum and education practices widely, through formal, professional and informal learning processes. ISE staff have developed collaborative and voluntary approaches to introduce the action research process within the faculty when opportunities for external funding have been limited.

At other times, projects have been supported through external funds (e.g. Erasmus) and through collaborative networking with scholars at other universities (e.g. in Canada, Australia, Scandinavia). These international activities have also helped to overcome the issue

that there are still very few ESD materials and tools available in the Latvian language. This needs to be addressed to help develop ESD in Latvia, to build on knowledge of sustainable development and extend understanding of ESD as pedagogy, using international ESD literature.

The ISE approach has been recognised as good practice, for example in evaluations at the annual *Conference on Sustainable Development, Culture, Education* in 2010. It emphasized that BBCC has extended its reach beyond the issues of teacher education and the activities of network have also been enriched with questions around educational research in general and the reorientation of other areas of education toward sustainability.

Q: What successes and landmarks have been achieved in reorienting education towards ESD?

An international commission acknowledged the achievements of ISE as one of the top five experiences in implementing the goals of the UNESCO Decade of ESD in the European and North American region. During the UNESCO World Conference on Education for Sustainable Development, held in March 2009 in Bonn, the ISE's experience illustrated the progress on implementing the goals for the first half of the UNESCO Decade. In 2009, the ISE received the Environmental Award in the competition of the Ministry of Environment as the best group of environmental activists, for their active contribution of spreading the idea of ESD in Latvia and abroad.

The integration of action research on ESD in the teacher training process, has affected all subjects, influencing learning experiences of around 40 Bachelors students annually, 80 Masters and 15 Doctoral students. A range of academic publications and several doctoral theses have been completed, e.g. *“Orientation of pre-service teachers’ frames of reference towards inclusion in nature”* by Inga Gedžūne and *“Pre-service teachers’ frames of reference for addressing children’s social exclusion in the classroom”* by Ginta Gedžūne. By engaging teachers in this process of learning for change and bringing together research with action, ISE have introduced new approaches to introduce ESD into the teacher training experience in reorienting their practice to the aim of sustainable development. By engaging teachers in action research, ISE helped them to develop ESD as phronesis – the ‘pedagogy of practical wisdom’.

Additional readings

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Further information:

More information about the Institute of Sustainable Education (ISE) at Daugavpils University, Latvia at:

<http://www.ise-lv.eu/>



Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



12/ INDUCTION: ESD mentoring scheme for novice teachers, Cyprus

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PROGRAMME HOST ORGANISATION

Frederick Research Centre



PROGRAMME PARTNERS

Cyprus Pedagogical Institute (Pedoulas Environmental Education Center), Ministry of Education and Culture, Cyprus



University of Karlsruhe, Germany



University of Alberta, Canada

FUNDING ORGANISATIONS

Research Promotion Foundation Cyprus (RFP), National Framework Program 2008



Co-funded by the Republic of Cyprus and the European Regional Development Fund of the European Union.



1 PROGRAM DESCRIPTION

WHY: The rationale of the project

The INDUCTION project aimed to develop an induction program for novice teachers in the framework of Education for Sustainable Development (ESD) due to the ESD connection to quality education, as well as its challenging characteristics such as systemic thinking, critical thinking, and a variety of teaching techniques, etc. (Flogaitis, 2005; UNESCO 2012; UNESCO, 2005). Our assumption therefore was that if you can train a teacher to effectively deliver ESD at school, you will have a quality teacher. Acknowledging the limitations of conventional training programs we opted for training based on the principles of adult education. We therefore chose to create a mentoring system as the mode of delivery for the training due to its practical, experiential and interactive nature. Creating a training program for novice teachers, based on ESD, delivered through a mentoring system was expected to (a) use the potential of ESD to promote sustainable development principles; (b) compensate for the weakness of current university education

to adequately prepare students for actual teaching work, (c) overcome the limitations of conventional training programs, (d) empower teachers to be able to respond to the challenges and particularities of ESD implementation, and (e) use ESD as a solid path for quality education.

Key questions

The issues and challenges that the INDUCTION project aimed to address include:

Q: Can ESD constitute an induction framework for all educators?

Q: How can professional communities of learning between ESD practitioners enhance ESD practice?

Q: What are the different needs for the ESD training of novice and experienced teachers?

Q: What quality education elements are delivered through ESD practice?

Q: What aspects of ESD delivery and thus teacher education should be empowered so as to help teachers become more effective in promoting quality education?

▼ Kick-off training (training in outdoor education)



WHAT: Programme objectives

The project's objective was to explore and assess the potential of ESD as a framework for an induction programme for promoting ESD and achieving quality education at the same time. The programme was implemented in four main stages: i) starting with an *assessment of needs*, which provided quantitative and qualitative data on the entire population of novice teachers in the country, ii) followed by a *short training programme* prepared according to the outcomes of the needs assessment and delivered with

formative and summative evaluation, iii) undertaking *programme implementation and monitoring* in schools on the basis of a mentoring system and iv) *finalisation of the end products* included in the INDUCTION package (Figure 4.11).

The programme initially addressed newly appointed novice teachers, but its focus was soon expanded to also include experienced teachers but who were novices in ESD. All programme participants worked with an expert partner as a mentor to plan and deliver ESD in their schools.

COLLABORATIVE CULTURE DIAGRAM

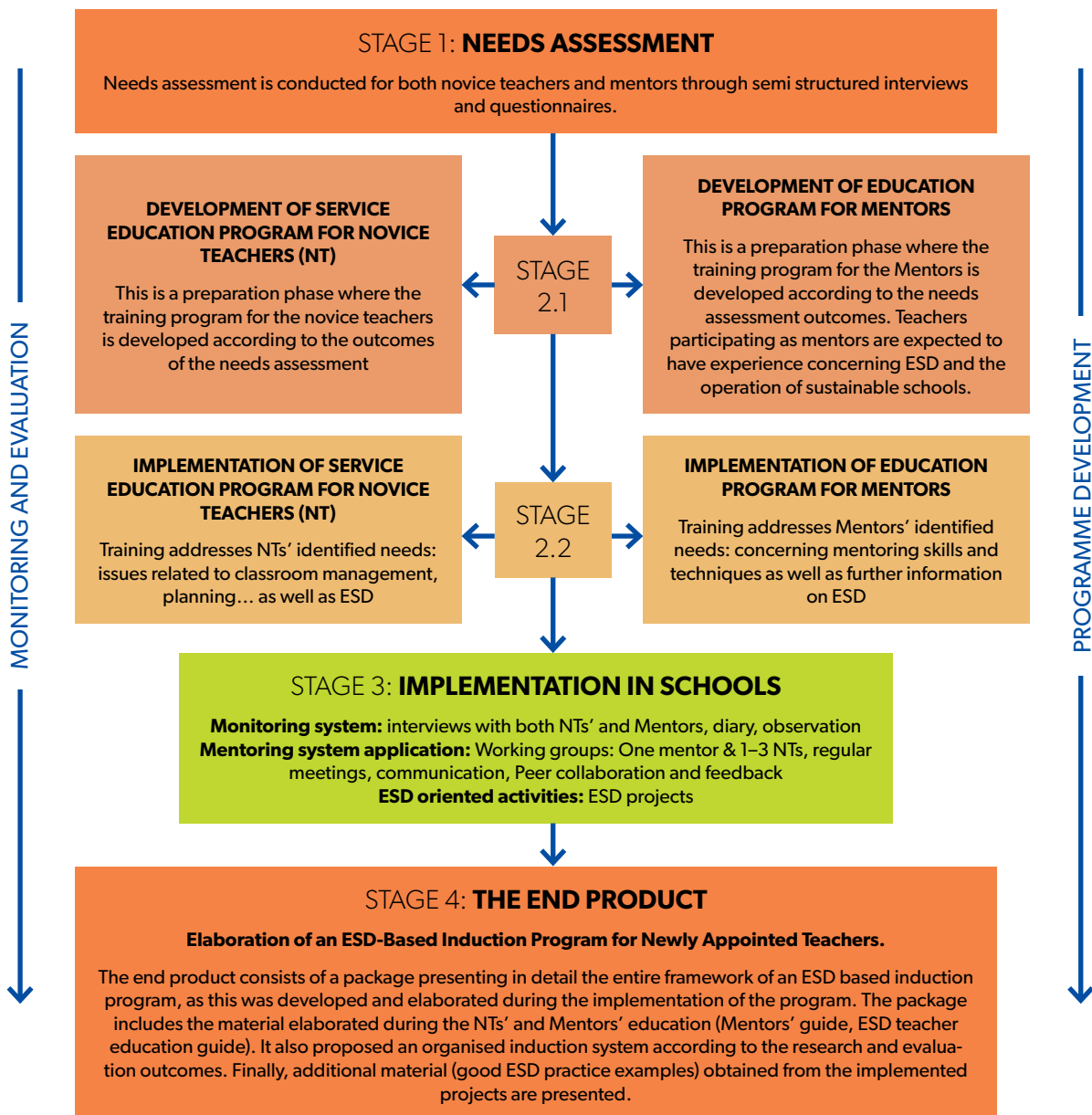


Figure 4.11 – Four stages of the INDUCTION project developing an ESD mentoring scheme for novice teachers in Cyprus

WHO: Programme Participants

The consortium was formed by three academic institutions and a governmental organisation (Frederick Research Centre, University of Karlsruhe, University of Alberta and Cyprus Pedagogical Institute). The host organisation was the leading coordinating institution. Along with the other local partner (a governmental organisation) they were responsible for the development of the research in all its stages, the development and delivery of training programs for the preparation of the research participants, the program implementation in schools, the data collection, analysis and dissemination. The academic institutions outside Cyprus had mainly a supportive role for the research development, analysis and elaboration, and also supported dissemination activities and local conferences organised within the project.

The teachers that participated in the research were primary and pre-primary teachers that – depending on their experience – acted either as mentors or mentees. Some of the mentors were university educators. In the case of pre-primary education, the mentees were university students in their final year of studies during their teaching practice at schools.

Nine university educators were involved in the project either as researchers and/or as

mentors. The university educators acting as mentors came from different academic fields (i.e. pre-primary education, educational technology, science education, primary education) and had prior experience with ESD due to their involvement in ESD targeted post-graduate programs.

HOW: Programme Implementation

In total, 42 teachers, 5 university educators and 10 university students participated in the program's implementation. They formed pairs comprising an experienced ESD person – the Mentor, and a newly appointed or ESD novice teacher. In a few cases the mentor was assigned with two to three mentees. After attending the initial training program for novice teachers and mentors each pair had to work together to prepare and support the novice teacher to deliver three teaching units / lessons in their schools on one sustainable development issue of their choice. The information on the collaboration of mentors and novice teachers was collected by means of multiple research tools: observation sheets, reflective diaries and interviews with both mentors and novice teachers. The triangulation reinforced the reliability and validity of the outcomes and helped the researchers gain a deep understanding of the value of mentoring as a training system in ESD.

▼ Final conference for practitioners as part of the INDUCTION project



2 KEY OUTCOMES

The research outcomes confirmed all the reasons for which we identified ESD as a valuable framework for novice teachers' induction in schools and its potential for promoting quality education. It has been shown that both mentors and mentees benefited from the collaboration. All participants acknowledged that the programme increased their competences in ESD and felt that it also strengthened their overall teaching skills. The university educators that acted as mentors enjoyed the experience and found that the project had enhanced their teaching practice in their respective fields either through enhancing the context of their teaching with ESD issues or the pedagogies they used.

A transformative mentoring system can most effectively promote the philosophy of collaboration, collegiality, solidarity, reflection, critical thinking, values and action orientation, as well as the change that ESD seeks to achieve in schools and society, within teacher education. The gradual emancipation resulting from the mentoring system also advocates its value within teacher education for ESD. Additionally, mentors suggested the formation of professional communities of learning for peer interaction in the field of ESD as experienced teachers also feel the need for refreshing and enhancing their knowledge and skills in the field. Outcomes indicated that a flexible mentoring system is the most effective (Tedder and Lawy 2009).

The outcomes of the project were particularly relevant for teacher training universities as they underlined the importance of ESD integration within their programmes of study on the one hand, and the importance of emphasising and expanding on the students' teaching practice for building up ESD competencies, on the other.

3 IMPLICATIONS FOR TEACHER TRAINING IN ESD

Our conclusion is that the multidimensional character of ESD is not compatible with training programs with predefined steps to be followed or a sequence of instructions. Teacher education has to be re-examined within the framework of the changes that ESD implementation requires from education in general and be specifically designed for the target group. We shouldn't be searching for the "most effective

training model". Rather, we should identify within each model the elements most suitable for supporting ESD. Collaborative forms of adult education, such as mentoring or professional communities of learning, as means of teacher education for ESD appear to be extremely effective (Kadji-Beltran et al. 2013; Vescio et al. 2006) as their practical nature and the sharing of experiences among peers promoted the development of pedagogy content knowledge, helped educators overcome the challenges of ESD, and at the same time it was extremely flexible as it could be adjusted to the different needs of the educators.

Further information on teacher training implications in:

Kadji-Beltran C., Zachariou A., Liarakou G., Flogaiti E. (2013). Empowering Education for Sustainable Development in Schools through Mentoring. *Professional Development in Education*. Taylor and Francis, UK. (DOI:10.1080/19415257.2013.835276)

Further information:

Find out more about the INDUCTION project at:

<http://www.ncu.org.cy/induction/index.html>

(in Greek, includes all end-products of the program, information on the program's activities, as well as the participants' examples of good practice)



Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



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13/ BINE: Professional development ESD course for higher education teachers, Austria

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University of Teacher Education Styria

University of Teacher Education Lower Austria

University of Teacher Education Vorarlberg

Applied University of Agricultural and Environmental Education

FORUM Environmental Education

Federal Ministry of Education and Woman Affairs (BMBWF)



1 WHAT

The University course *Innovation in Teacher Education – Education for Sustainable Development* (BINE) is a professional development course for higher education teachers in Austria. The main goal of BINE is to encourage participants to deal with subject information on sustainable development and education for sustainable development as a “community of learners” in a reflected way. To achieve this, the course aims to (a) improve pedagogical research competences (mainly action research), (b) research and reflect on educational practice in teacher education in diverse educational subjects, and to (c) implement sustainable development issues in the teacher education curriculum.

The BINE course is based upon a research project entitled *Environmental Education in Teacher Education* (ENITE) which was run in several phases in the years 1997-2004. Based upon this project the ENITE-network has been created as a platform for the mutual exchange of experience and ideas in order to support the stabilisation of existing ENITE initiatives (e.g. co-operation of the University in Vienna with schools; project oriented teaching and learning, etc.) and their expansion to additional institutions of teacher training (Rauch & Steiner, 2003). This has been followed by the development of the BINE Course which has been running since 2004. Internationally, the project and the course are the Austrian contribution to the international *Environment and School Initiatives* (ENSI) network in the realm of teacher education (www.ensi.org).

The ENITE research project, the ENITE network and the BINE course are based on the following principles:

Learning experiences are built on the previous experiences of the participating educators and influenced by them. This implies active participation by the educators in developing the contents and methodology of a project (from problem definition to quality evaluation);

Learning is designed as an interdisciplinary process and not fragmented into disciplines;

Learning includes a research component based on systematic reflection on actual teacher practice (action research);

The impact on and changes in work cultures and organisational structures are taken into account in the action and reflection processes (Posch, Rauch & Kreis 2000).

2 KEY QUESTIONS

The key questions this initiative aims to address are:

Q: How might inquiry based learning in ESD be developed and sustained within teacher education at universities?

Q: How can action research as well as other forms of research inform ESD?

Q: How can networks support the sustainable development of ESD at universities and in schools?

3 WHY

Like human rights, sustainable development may be regarded as a “regulative idea” (Immanuel Kant). Regulative ideas don’t indicate how an object is made up but serve as heuristic structures for reflection. They give direction to research and learning processes. In terms of sustainability, this implies that the contradictions, dilemmas and conflicting targets inherent in this vision need to be constantly re-negotiated in a process of discourse between participants in each and every concrete situation. This implies a great challenge but also has considerable potential to enhance innovative developments in education in general and in teacher education in particular. Against this theoretical background and according to empirical findings it is evident that ESD is barely developed in teacher education.

Furthermore, the interdisciplinary nature as well as the present and future relevance of the sustainability debate, with all its inherent dilemmas, uncertainties and confusions, may constitute fertile ground for educational innovation. It is of utmost importance to address the challenge of the vast complexity which results from sustainability and related uncertainties in order to retain a capacity for action without lapsing into simplistic dogmas. While on the one hand sustainability issues are used as a vehicle for innovation in education, they are also meant to trigger

concrete sustainable social development processes (Rauch, 2002). This implies a great challenge but also has considerable potential to enhance education for sustainable development.

On a structural dimension the course was developed as a joint initiative of the institutions involved in the ENITE network (see above). The curriculum of the course should offer a context for further development and research and combine it with a formal certificate, as well as with a dissemination perspective. Members of the ENITE project form the leading team of the course.

4 HOW

The BINE course offers three one-week seminars plus regional mentoring meetings. Participants write case research based studies in order to get a certificate. In the course, equal emphasis is put on theoretical-methodical foundation and learning from one's own practical experiences/projects. Projects on sustainable development and research activities are related to one another. So far three rounds of the BINE course have been completed (2008, 2011, 2014).

In the *seminars (SE)* - part of the BINE course - the contents are conveyed in the form of presentations and input by the seminar leaders/guest speakers (designated experts from educational, political, social and economic sciences) and then dealt with and discussed on a deeper level in group work, exercises and workshops. *Working groups (WGs)* serve to facilitate the exchange of experiences, the work on literature and the support of research work. WGs are held in regional groups and led by a member of the BINE leadership team. In the *research project* the participants develop and investigate a project based on their own practice according to the paradigm of practice research / action research. The work is supervised by a member of the leadership team (see the diagram in **Figure 4.12** for an overview of the course).

The BINE course comprises the following *obligatory courses* (amounting to a total of 36 ECTS-points):

- *Module 1:* Concepts of Sustainable Development, topics of Education for Sustain-

able Development, research methods, conception of own project and research plan (1. term; SE 6 ECTS; WGs 1.5 ECTS)

- *Module 2:* Didactic Strategies in Education for Sustainable Development; research methods; reflection and analysis of the projects conducted so far and research (2.-3. term; SE 6 ECTS; WGs 4.5 ECTS)
- *Module 3:* Research methods; visualisation and presentation techniques; cooperative further education - mini workshops, presentation of the results of the course of study (3.-4. term; SE 6 ECTS; WGs 1.5 ECTS; Thesis 10,5 ECTS)

In a process of continuous professional development the university educators research their own initiatives at their institutions with the goal of in-depth analysis based on evidence and the further development of the ESD initiatives. This development and learning process is supported by the leaders of the course and by exchange with fellow course participants who serve as critical evaluators (as well as friends).

5 WHO

The participants are teacher-educators from University Colleges of Teacher Education and universities that work on sustainable development issues and their educational challenges.

The BINE course is run by the Institute of Instructional and School Development at the Alpen-Adria University in Klagenfurt together with the University of Teacher Education in Upper-Austria Linz. Some more Teacher Education Universities (in Styria, Carinthia, Vorarlberg, Lower-Austria, and the HAUP) and the University of Vienna are partners. The course is led by a team of experts (at the moment Franz Radits, Franz Rauch, Katharina Soukup-Altrichter, Regina Steiner). In terms of finances, the participants pay a fee to attend. The co-operation partners offer mainly teaching hours for the leading team and invited guest speakers. The first two courses were co-financed by the Austrian Federal Ministry of Education and Woman Affairs. The third course received substantial subsidies from the University of Teacher Education University of Teacher Education of Upper Austria.

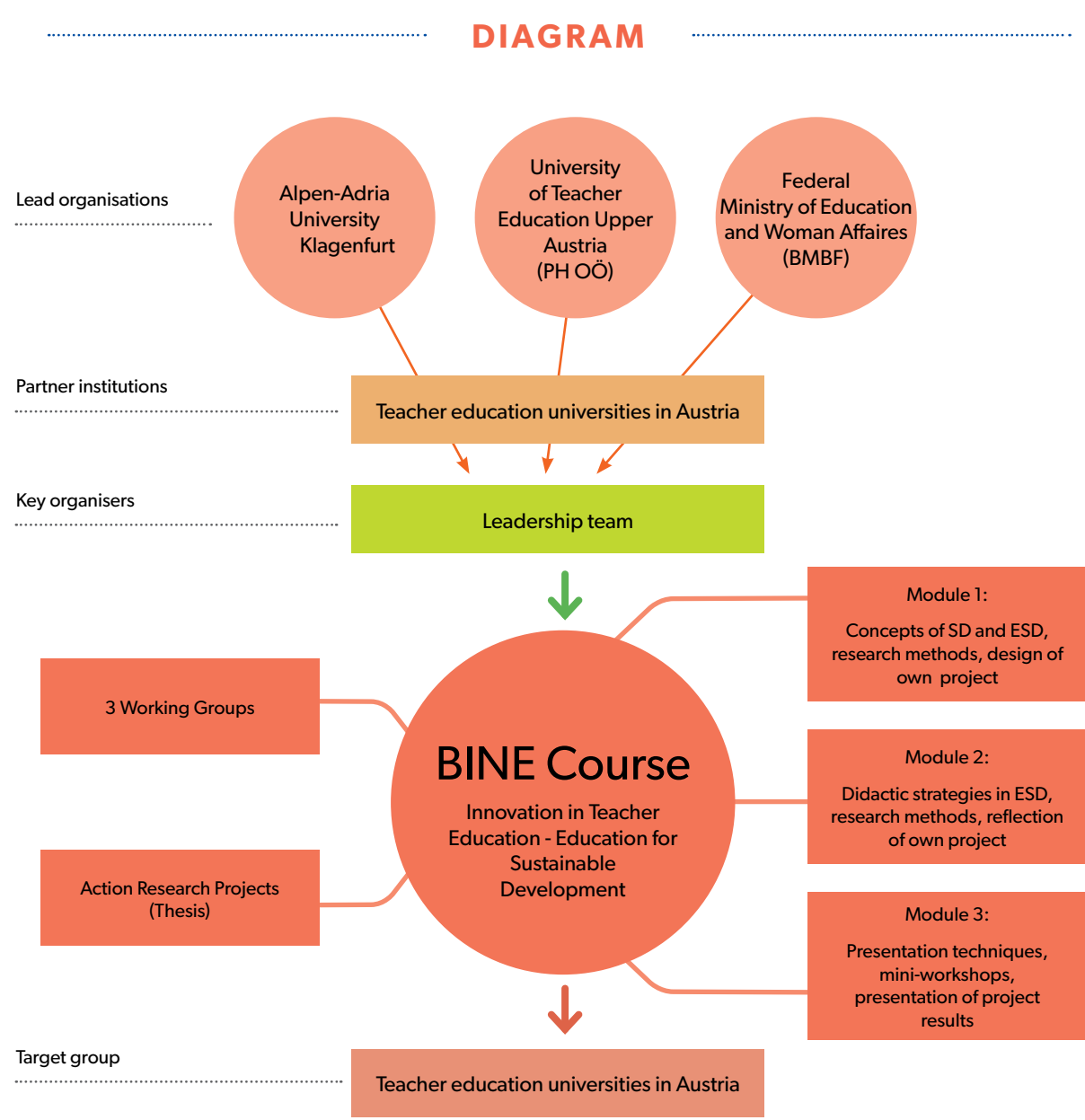


Figure 4.12 – Overview of the structure of the Innovation in Teacher Education - Education for Sustainable Development (BINE) course, Austria

6 CONCLUSIONS

The course is evaluated by a formative and summative self-evaluation with internal (questionnaires, feedback by participants) and external (questionnaires interviews with participants at the beginning and the end of the course) components.

One of the main goals of the course is that the participants gain knowledge in ESD and Action Research. **Figure 4.13** and **Figure 4.14** show the increase in both categories.

Some interview quotes illustrate participants' reflections:

“The course was productive because it was exciting for me to have the opportunity to share issues of education and sustainability with colleagues from different areas.”

„What I have learned is how to plan a research project ... which steps are necessary and where to get support ... most crucial and important for a good product is the starting point. The course nurtured my interest and the joy of doing research.“

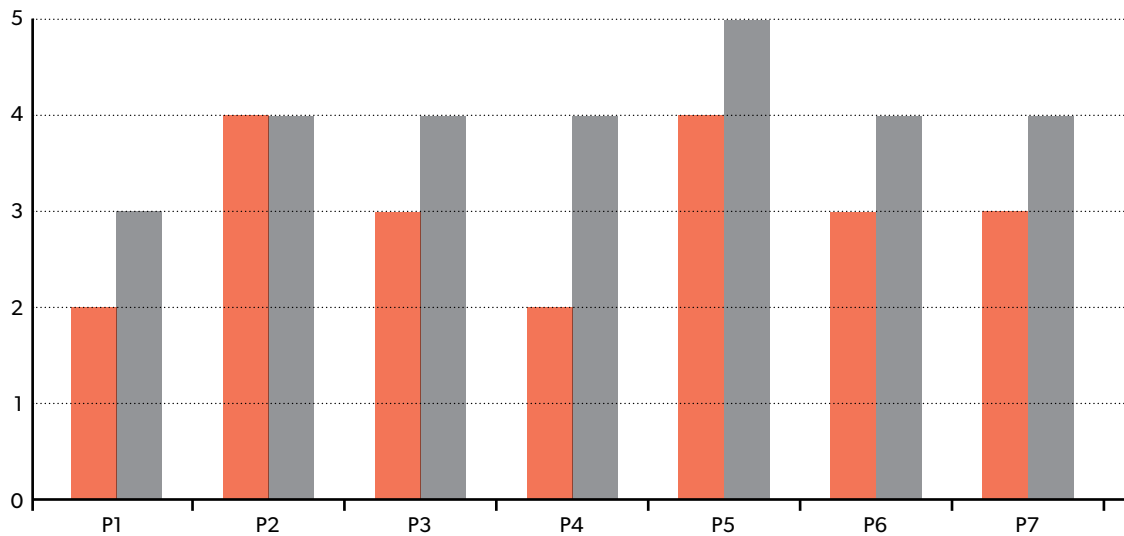


Figure 4.13 – Self-reported knowledge on Action Research based upon external questionnaire (red: before the course, grey: after the course; (min=1, max=5; P1-P7 = participant 1-7)

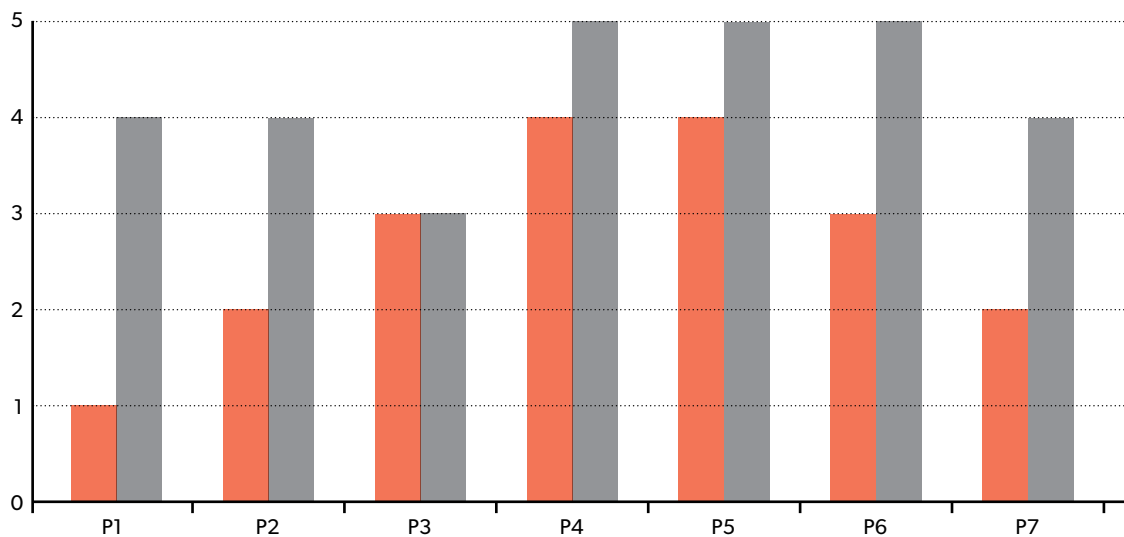


Figure 4.14 – Self-reported knowledge on ESD based upon external questionnaire (red: before the course, grey: after the course; min=1, max=5; P1-P7 = participant 1-7)

The overall results of the evaluation have shown that:

- The BINE course offers an adequate instructional and learning strategy for the participants to construct the meaning of the complex issues of sustainable development and ESD by researching, reflecting and exchanging in the learning group focused on concrete examples.
- The course has proven to enable a learning community.
- It is a challenge not to simplify ESD and lose its potential to identify the inter-connections between the ecological, social, economic and cultural-political spheres more clearly and adequately.
- The action research process provides a basis for learning in order to further develop the participants' concepts of ESD as well as research and implementation competencies.

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Further information:

More information about the BINE course at the FORUM Environmental Education website (in German):

<http://www.umweltbildung.at/initiativen/archiv/bine-lehrgang.html>



More information about the BINE course at the Alpen-Adria-University Klagenfurt website (in German):

http://ius.uni-klu.ac.at/lehre_und_beratung/lehrgaenge/bine/



Case study and additional materials at the UE4SD Online Platform of Resources (access via the UE4SD project website):

<http://www.ue4sd.eu/>



CHAPTER 5

REFLECTION

Main outcomes and lessons
learned from the leading
practice examples

Authors:

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This chapter summarises on the key outcomes and lessons learned from the 13 case studies presented in this publication spanning from relatively small-scale institutional initiatives to large-scale international projects. All of these initiatives play an important role in university teachers' professional development on ESD in Europe as they reflect the cultural, institutional as well as educators' needs in their own particular context. This section therefore aims to reflect on the most important aspects of the presented best practices to serve the global community not only as an overview material, but also as a material from which to learn for future developments of PD activities of university educators in Europe and beyond.

511 Reflection on the 13 best practice examples

The 13 best practice examples contained in Chapter 4 represent the state-of-the art in the current European ESD professional development scene on the level of higher education. This publication therefore captures a wide diversity of such PD opportunities in terms of their type (e.g. networks, national programs, institutional initiatives etc.) and scope (institutional, national, international) (for an overview see pp. 40-41).

Type of PD activities

The most common type of PD activities among the best practices is based on an existing network structure, which is mentioned in 7 case studies (MedUnNET, ENOAT, RU-

Table 5.1 – Overview of innovative methods and approaches in ESD oriented HE pedagogy among the 13 best practice examples; key points taken from the individual case studies; orange highlight marks examples that refer to the UNECE competence framework (UNECE, 2011)

	Case study	Innovative methods and approaches in ESD oriented HE pedagogy
1	MedUnNET	<p>The ESD training of university staff follows adult learning and includes:</p> <ul style="list-style-type: none"> ● Combination of theory and practice in a given structure: first work in groups, discussions etc., followed by a theoretical lecture and concluded with practical discussion on how to integrate the new knowledge in practice. ● ESD competences based on the UNECE framework supporting (i) holistic approach in the educators' teaching approaches, (ii) envisioning change from unsustainable practices and (iii) transformative pedagogy.
2	ENOAT	<p>Curricular change (transition towards agroecology) includes:</p> <ul style="list-style-type: none"> ● Interactive methods of teaching, interactive hands-on teaching approaches and discussion-based learning, team & group work, world café etc. ● Teaching focus is on the process of problem identification. ● The learning process is facilitated by mediators.
3	RUCAS	<p>The RUCAS model provides guidance for:</p> <ul style="list-style-type: none"> ● The use of a variety of pedagogical methods that promote active and participatory learning: group-work, critical self-reflection, peer discussions on global real life topics or controversial issues. ● Employing alternative means of assessment, as performance tasks, data gathering assignments, research projects, oral presentations and portfolios.
4	Ecocampus	<p>The initiative includes:</p> <ul style="list-style-type: none"> ● Problem – and project-based learning through case studies and projects, where practice leads to theoretical insights, reflection and attitudinal change. ● Interactive and participatory methodologies (e.g. group discussions, role plays which take into account the different stakeholders involved in the process, Socratic method). ● Research oriented methodologies (e.g. CSI smartphone, which invites the students to analyse the materials used in and SD impact of their own smartphone; road pricing: what are the benefits for the government? What's the ecological impact?). ● Action oriented methodologies: project weeks, internships, company visits, etc.

5	Green Academy	<p><i>Developing staff capacity in ESD comprises:</i></p> <ul style="list-style-type: none"> • Use of team-based approaches; action planning and strategy development skills; experience in leadership and change; change agency skills. • The professional development process is informed by principles such as distributed leadership, change management, action learning sets and peer-to-peer learning. The ESD framing of the programme is geared to 'whole institution' ESD development, including the formal curriculum and co-curriculum.
6	CADEP-CRUE	<p><i>Students' service to the community includes these learning goals:</i></p> <ul style="list-style-type: none"> • The learning of cross-cutting skills-building in the attitudinal, methodological and cognitive sphere. • Critical contextualisation of knowledge by establishing interrelations with environmental, economic and social problems, locally and/or globally. • Participation in community processes that foster sustainability. • Application of ethical principles related to sustainability values in professional practice and personal life.
7	LSF	<p><i>The LSF approach is strategic in focusing on:</i></p> <ul style="list-style-type: none"> • Pedagogical inquiry with an action learning focus; not about researching ESD, but bringing ESD into the thinking and practice of teaching teams and professional departments. • 1-1 mentoring tailored to the individual, to develop ESD competence and the ability to influence curriculum change. • bespoke advice that links ESD principles with the specialist area and helps to develop wider institutional practice in ESD".
8	ISDE	<p><i>The informal network supports and provides:</i></p> <ul style="list-style-type: none"> • Developing creative thinking, self-education, and mutual support of university educators. • Transfer of values besides knowledge and skills. • Interaction; continual dialogue (among educators and between educators and students). • Linking teaching to research and to real-life professional practice. • Sensitisation to the local context – both academic and societal. • Space for critical debate and supportive environment, collaborative and synergetic – not a competitive one.
9	Leuphana Semester	<p><i>Culture of collaborative teaching and learning is created through:</i></p> <ul style="list-style-type: none"> • Project-based seminars; shift from educator-centred to learner-centred approaches. cooperation and work in small groups. • Focus on a special problem within the wider context of ESD. • With teachers: discussions, expert input, world café dialogues and cooperative consulting. • Focus on competence to understand both the potential and limitations of future thinking.
10	Innovation Projects for Sustainability	<p><i>Education based on local challenges regarding sustainability uses concepts of collaborative work (within the Open Source Project) encouraging:</i></p> <ul style="list-style-type: none"> • Critical thought, collaborative and participatory learning of students and academic staff. • Stimulating creativity and envisaging different alternatives for the future.
11	ISE	<p><i>The initiative is based on:</i></p> <ul style="list-style-type: none"> • Using participatory action research as a transformative tool for learning in diverse educational contexts. • Integrating action research and making it relevant for the educators. • Affirming their right and ability to have a say in matters which affect them.
12	INDUCTION	<p><i>Flexible mentoring system as the mode of delivery of the training based on:</i></p> <ul style="list-style-type: none"> • Collaboration, collegiality, solidarity, reflection, critical thinking, values and action orientation as well as the change that ESD seeks to achieve in schools and society, within teacher education. • Gradual emancipation resulting from the mentoring system. • Formation of professional communities of learning for peer interaction in the field of ESD.
13	BINE	<p><i>Writing case research based studies is based on:</i></p> <ul style="list-style-type: none"> • Equal emphasis on theoretical-methodical foundation and learning from one's own practical experiences/projects. • Active participation of the educators in developing contents and methodology. • Systematic reflection on actual teaching practice (action research). • The goal is to enable a learning community.

CAS, Ecocampus, CADEP-CRUE, ISDE and BINE). These include informal institutional networks (ISDE), national-level networks (Ecocampus, CADEP-CRUE, BINE) as well as international networks (MedUnNET, ENOAT, RUCAS). Furthermore, three best practice examples each fall under institutional programmes (LSF, Innovation Projects for Sustainability and ISE) and single workshops/courses (Leuphana semester, Induction and BINE). Two best practice examples present educational programmes on the national level (Ecocampus, Green Academy).

With regard to types of **PD activities based on the four geographical UE4SD areas**, the best practices provide the following:

1. Region SOUTH offers project - and network-based PD opportunities for university staff
2. Region NORTH contains nation-wide as well as institution-based examples of PD in ESD with strong support on the national level
3. Region EAST has predominantly informal PD initiatives and individual international involvement (institutional support for PD in ESD appears to be weak in this region)
4. Region WEST offers various nation-wide as well as institution-based opportunities for staff development

Pedagogical approaches and ESD framing

A wide variety of pedagogical approaches have been applied in the 13 best practice examples (Table 5.1). Many of the examples focus on: relevance for practice in (E)SD; collaborative, participative and interactive approaches; problem - and project-based learning; action research methodologies; team-based learning, learning communities and mentoring. Three of the best practice examples are based on or explicitly mention the UNECE framework of ESD competences (UNECE, 2011)(orange highlight in Table 5.1).

Outcomes of the PD activities

All of the PD examples demonstrate possible and diverse ways for increasing ESD competences and capacities of university teaching staff and the transfer of these to their teaching practice. The positive reflections of organisers, facilitators and participants in the individual case studies illustrate the importance of these “soft” outcomes that are relatively difficult to measure or demonstrate. In addition to these important “soft” outcomes acquired

via workshops, programmes and mentoring schemes, many of the PD examples have also produced a number of free materials and resources that can be used by interested stakeholders. These include for instance:

- Resources for the introduction of sustainability into the curriculum (see e.g. RUCAS, CADEP-CRUE, Ecocampus)
- Numerous research articles (see individual case studies)
- Useful websites and online resources (see individual case studies)

For full details on outcomes and resources see the individual case studies in Chapter 4.

Impact of the PD activities

Given the different scopes and types of the presented PD activities, the overall impact (in terms of numbers of people reached) also varies considerably. Some of the large-scale international projects and networks have resulted in hundreds of university educators and thousands of their students enhancing their ESD and thousands of their students benefiting from this, while the smaller-scale institutional activities have supported much smaller number of university staff. Nevertheless, due to the role of university educators in transferring the newest knowledge that research provides to the continuous flow of students going through higher education institutions, even the relatively small-scale PD initiatives can have big impacts on the society as a whole. These initiatives are particularly suitable for innovation in teaching practices and experimentation with new approaches.

The best practices show that there already exist some excellent opportunities for university staff to develop their ESD competences and these can serve as model examples for the development of new PD initiatives in different cultural contexts throughout Europe. Such new initiatives are needed since many university educators still lack ESD professional development opportunities as identified during the UE4SD mapping stage of the project (UE4SD, 2014). At the same time it is important to highlight the role of cultural and institutional context in applying the principles identified in the case studies to new initiatives. The case studies should rather be seen as a diverse collection of ideas from which to choose those that best fit each particular context.

The role of financial and non-financial support

The best practice examples described in this publication show that there exists a variety of sources of funding available for PD activities on ESD in Europe. The funding bodies include international institutions such as the European Commission (international projects), national and local governments (national programmes), as well as individual higher education institutions (institutional programmes). A number of examples report that the PD activities are financially supported as part of other initiatives and projects that primarily do not focus on professional development. Funding availability therefore certainly plays a role in the number and scope of PD opportunities in European countries. However, it appears that it is not the only factor determining the success of the current PD initiatives.

Systemic support from the side of HEIs seems to be even more important in driving PD initiatives forward. This includes the acknowledgement that PD is an important integral part of university educators' profession. Such acknowledgement is also typically accompanied by certain financial as well as non-financial support of staff that take part in the PD activities. The best practice examples presented in this publication show that many of the initiatives are relatively low-cost and so there is no need for extensive initial investment for setting up new good-quality PD activities for university educators. Some modest funding together with acknowledgement from the side of the university leadership seems to be the key to engagement of staff and overall impact of the PD initiatives.

Lessons learned

The key lessons learned from the 13 best practice examples can be summarised as follows:

- The most common **types of PD initiatives** benefit from cooperation within existing university networks; they include international, national and institutional programs and activities.
- A wide variety of **pedagogical approaches** are applied in the PD initiatives, ranging from participatory approaches and team-based learning to action research and project-based learning (and more).
- An important factor for change in teaching/learning culture (implicitly or explicitly present in many of the examples) is opening of space for critical debate and building of

supportive environment for upgrading educational contents and approaches; 'whole institution' framing is of strategic interest here.

- The **overall impact** of the PD initiatives in terms of number of educators reached differs depending on the type and scope of the activities. All have a positive effect on educators and their students.
- The **role of financial and non-financial support** is an important aspect affecting the availability of PD opportunities for university educators. General support of the university leadership and/or national or local government with modest financial resources seem to be behind the success of most of the PD initiatives presented.

5|2 Summary

This chapter reflects on the 13 case studies presented in this publication (Chapter 4) and provides an overview of key lessons learned relating to the types of the PD initiatives, their pedagogical approaches, outcomes, overall impact and the role of funding. Existing networks seem to be a good supporting factor for the development of successful PD initiatives at various levels of engagement from large international consortia to relatively small institutional networks or learning communities. Pedagogical approaches and ESD framing varies among the examples, but generally includes mainly participatory approaches and action learning among others. Availability of funding is an important factor in European PD opportunities, but acknowledgement and general support from the top leadership at institutional level is in many cases equally or even more important for the success of the initiatives.

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CHAPTER 6

PATHWAYS

Conclusions and key messages
on best practice ESD
professional development
in European HE

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This chapter concludes with key messages and recommendations aimed at all stakeholders in European professional development in ESD on the level of higher education.

6|1 Key messages

Summarising the preceding chapters of this Leading Practice Publication a number of key messages have been identified (Box 6.1).

6|2 Best practice PD in ESD recommendations

Based on the key messages and lessons learned from the 13 best practice examples showcased in this publication specific recommendations for the different target groups have been suggested (Box 6.2).

6|3 Summary

Chapter 6 concludes with key messages and recommendations for future developments of PD opportunities for university educators. It highlights the need for policy-makers and university leadership to acknowledge the need for PD opportunities for teaching staff, including the positive role of ESD in teaching quality enhancement, and to provide support for the development of such opportunities throughout Europe. Educators are encouraged to develop new PD opportunities at their institutions and to make use of the increasing number of PD initiatives and resources available. Reflection of ESD through further research will enhance the innovative potential of ESD in higher education.

Box 6.1

KEY MESSAGES

- 1 Good-quality PD opportunities in ESD for university staff are needed across Europe (and particular focus should be given to those countries where such opportunities are lacking).
- 2 Exchange of knowledge and experiences concerning current best practice is needed within and between countries.
- 3 Placing focus on educators' competences is a valuable way of integrating ESD into curriculum policy and quality enhancement that also enables adjustment for cultural differences.
- 4 Successful PD initiatives in ESD focus on active, participatory approaches and project-based learning and are closely related to the educational environment ('whole institution approach').
- 5 Methodological tools and models for general curricular change related to the overall SD university transition exist and should be analysed and reflected in the broader context of HE policies and educational theories."

Box 6.2

RECOMMENDATIONS

For policy-makers:

- acknowledge the importance of PD in ESD for university educators and support the systemisation of PD in line with existing policy documents;
- consider ESD principles in quality criteria for higher education, especially with regard to its role in the overall transition of the HE sector (the constantly increasing number of HE programs and institutions);
- support the integration of PD in ESD policies and strategies at the European as well as the national level, and promote international acceptance of its main principles so that those countries that are currently not as active in ESD are also affected;
- encourage the implementation of existing and new policies and strategies on PD in ESD for teaching quality enhancement;
- support international and intercultural exchange of experience via support of new PD programmes and schemes.

For university leadership:

- acknowledge the general importance of PD and the role of ESD in PD for university educators;
- reflect upon the role of ESD in quality criteria for higher education;
- acknowledge leadership in this sphere: support individuals as well as teams that develop and disseminate good PD in ESD practices within the HE institutions;
- provide basic financial support for PD opportunities;
- building PD opportunities based on existing networks seem to be a common and effective way of engaging staff;

- mentoring schemes and project-based activities are relatively low-cost and high-impact PD types of initiatives.

For university educators/researchers:

- inform your university leadership about PD opportunities in the field of ESD;
- critically reflect upon the quality in HE teaching from the ESD point of view;
- consider innovative opportunities within ESD and together with continuous reflection embed new methods and approaches in your own teaching practice;
- connect with leading teams and the main journals active in this area and start a professional discussion;
- get involved in existing PD initiatives and make use of existing resources (the UE4SD Online Platform of Resources is a good place to start, see RESOURCES).

For all stakeholders in HE:

- acknowledge the importance of PD as such, and specifically in ESD for university educators;
- ask students about their preferences concerning teaching/learning methods and approaches, and reflect their interests;
- create new PD opportunities for teaching staff in ESD;
- develop a dialogue with other social actors such as businesses and other future employers and formulate joint strategies concerning the competences of graduates;
- involve the general public and important actors in education in debates on the purpose and aims of higher education, and the desired changes in HE policies.

RESOURCES

This section provides an overview of publications and resources created as part of the UE4SD project. It also presents a list of selected further readings relevant to the topic of professional development of university staff in ESD.

Please note that **references used in this book** can be found at the end of each respective chapter:

- Chapter 1 References: p. 18
- Chapter 2 References: p. 27
- Chapter 3 References: p. 35
- Chapter 4 References: p. 39
- Chapter 5 References: p. 125

UE4SD project resources

UE4SD Regional Reports:

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- Dlouhá, J., Barton, A., Dlouhý, J., and Kapitulčíková, D. (2014) UE4SD Report for Region East: Mapping opportunities for developing Education for Sustainable Development competences. Charles University Prague, Czech Republic, 262 pp.
- Mader, M., Michelsen, G., Mader, C., and Burandt, S. (2014) UE4SD Report for Region West: Mapping opportunities for developing Education for Sustainable Development competences. Leuphana University of Lüneburg, Germany, 131 pp.
- Tilbury, D., Mulà, I., and Ryan, A. (2014) UE4SD Report for Region North: Mapping opportunities for developing Education for Sustainable Development competences. D. University of Gloucestershire, Cheltenham, 61 pp.

UE4SD State of the art Report:

- UE4SD (2014) Mapping opportunities for professional development of university educators in Education for Sustainable Development: A state of the art report across 33 UE4SD partner countries. Authors: Mader, M., Tilbury, D., Dlouhá, J., Benayas, J., Michelsen, G., Mader, C., Burandt, S., Ryan, A., Mulà, I., Barton, A., Dlouhý, J., and Alba, D. University of Gloucestershire, Cheltenham, 57 pp.

UE4SD Online Platform of Resources:

- The Online Platform of Resources contains all of the case studies presented in this publication, as well as more good practice examples and various other materials relating to ESD professional development in European Higher Education. You can explore all these materials by visiting the UE4SD project website and navigating to the Online Platform from there: <http://www.ue4sd.eu/>

Further readings

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All UE4SD resources
can be accessed online
free of charge at:

<http://www.ue4sd.eu/>



If you have any questions
or comments regarding the
publication or the UE4SD
project, please contact the
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