

# Civil rights and obligations are connected to environmental issues in the curricula?

*A comparative analysis of education for sustainability content in 9 European countries*

**enjoined**  
educate for sustainable development

**Mladen Domazet • Daniela Dumitru • Lana Jurko • Kaja Peterson**



This book is a part of a wider ENjoinED initiative <http://www.enjoined.edupolicy.net> which promotes inclusion of education for sustainable development (ESD) in the formal education systems of the participating countries through research, advocacy and policy monitoring. ENjoinED initiative is born out of Education for Sustainable Development Partnership Initiative (ESdPI) project.



*This project is funded by the European Union <http://ec.europa.eu/world/>*

*This publication has been produced with the assistance of the European Union. The contents of this publication are the sole responsibility of Network of Education Policy Centers and can in no way be taken to reflect the views of the European Union.*



*This project is co-funded by the Government of the Republic of Croatia - Office for Cooperation with NGOs  
This publication has been produced with the assistance of the Government of the Republic of Croatia - Office for Cooperation with NGOs. The contents of this publication are the sole responsibility of Network of Education Policy Centers and can in no way be taken to reflect the views of the Government of the Republic of Croatia - Office for Cooperation with NGOs*

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MAR – Environmental Protection and Rehabilitation – Kosovo  
Macedonian Civic Education Centre – Macedonia  
Environmental association Planetum – Strumica - Macedonia  
Foundation Center Education 2000+, – Romania  
Focus association for sustainable development – Slovenia

**Published by:** Network of Education Policy Centers (NEPC), Zagreb  
Edition series: NEPC Comparative Studies in Education – Book 1  
For the publisher: Asja Korbar

**Suggested citation:** Domazet, M., Dumitru, D., Jurko, L., & Peterson, K. (2012). Civil rights and obligations are connected to the environmental issues in the curriculum? A comparative analysis of the ESD in 9 European countries. Zagreb: NEPC



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**Print:**

RD DIGITAL d.o.o.

ISBN: 978-953-57241-0-0

A CIP catalogue record for this book is available from the National and University Library in Zagreb under 810122

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NEPC Comparative Studies in Education  
**Zagreb, 2012**

# Table of Contents

Foreword	6
Acknowledgments	8
List of Abbreviations	10
List of tables	10
List of figures	11
Executive summary	12
<b>1. EN-what?: the ENjoinED initiative and the participating organisations</b>	<b>15</b>
Management of the project	22
Objectives of the ESdPI research and this study	22
<b>2. Notions of SD and ESD</b>	<b>25</b>
Sustainable Development	27
Education for Sustainable Development	31
Sustainable Development in the national curricula for compulsory education	34
<b>3. ENjoinED countries' education and sustainability profiles</b>	<b>37</b>
Compulsory Education	39
Sustainability indices	50
<b>4. Methodology</b>	<b>53</b>
The research tools	55
The research process	64
Research limitations	66
<b>5. Comparative Research Findings</b>	<b>69</b>
5.1 Knowledge about environment, society and economy	71
Selected environmental elements	75
Human/Environment Interaction	80
Selected economic elements	82
Selected socio-cultural elements	89

5.2 Skills and Values	101
Respect, responsibility, reflexivity and complexity are the foundation of ESD skills and values in national curricula	101
Managing change and uncertainty	104
Community cooperation	116
5.3 Rote and process learning	129
<b>6. Concluding remarks</b>	<b>133</b>
References	139
Annex 1: Coding Matrix	144
Annex 2: Frequency table Phase A of research	148
Annex 3: Summary of the national conclusions and recommendations	149
Organisations participating in the research	156
About the authors	160

## Foreword

ENjoinED story is a story with a generally uninteresting plot (the topic is education), peculiar characters (CSOs, green grassroots and educational think-tanks) and questionable denouement (*Education for Sustainable Development* in hearts, minds and agendas of the societies in Eastern European region and beyond). Even though the scene is set in such an unpromising way, the screenwriters and the actors still believe that it might be successful – and they do so because there is no other way to act.

So, our story begins with a belief, and this is something typical for the CSO characters: they are often concerned with noble missions that others dismiss as unrealistic, making their efforts look as a drop in acidified ocean. If the mission is noble, but the drop is powerless, the question is how to give it the power that it needs. Believing that education for sustainability is something crucial for the countries with a difficult heritage of the past (war, social inequalities, pollution, development without a clear vision), where the decisions that concern all members of the society and their future successors were (are) often made irrationally and based on particular interests, ENjoinED organizations decided to strengthen their message through scientific evidence, *by finding out what exists in the national education curricula that is relevant for sustainability*. This perhaps explains the awkward character motivation in this story - what have CSOs got to do with educational research?

Even though globally evidence based policy making is not a recent invention, one can claim that evidence is not frequently used to characterise narratives about the present and the future of the states of the ENjoinED region. One might also claim that ‘evidence’ is often trapped in the circle of academia and scientific institutes. Growing out of such a situation, ENjoinED organizations saw the use of evidence as a part of political maturity and political culture of a society; they also saw themselves as a legitimate actor for conducting this kind of research, benefiting from their expertise gained through formal, non-formal and informal learning. In this context, ENjoinED organizations want to contribute to public discussion on the issue of education for sustainability, but in no way presume to be taken as the only voice in it.

It is not that this research, the results of which you can find in this book, is beneficial only in a one-way mode, i.e. for the reader. In many ways, it was a learning process for the very researchers, too – preparing evidence and making the use of it gave the credibility to ENjoinED message; knowing what is missing and what should be reframed concerning education for sustainability in the national education systems of the participating countries helped the Initiative to prepare tailor-made education modules for those that we identified as a key actors when it comes to sustainable future – teachers, public authorities and businesses; consolidating the message on research findings definitely contributes to the change of image of CSOs as blurry organizations that invest their efforts into achieving potentially noble goals, but are in the end irrelevant and ineffective.

What we hope might be the most important lesson learnt by all involved is that sustainable development interconnects all aspects of existence in the world – environmental, social and economic - and that we should keep in mind this interconnectedness, even though it might create operational difficulties. Despite the fact that the time for the sustainable switch is running out, and the means are clumsy, ENjoinED partners do believe that education is capable of achieving such a change. The book that you have in front of you is a fruit of the efforts born out of such belief. Enjoy your reading.

***Asja Korbar***

*ENjoinED Project Coordinator*

## Acknowledgments

In collaborative projects of this size it is hard to give formal acknowledgment to all those who helped make this book come to fruition. It stems from a yearlong formal collaboration of 14 organizations from 8 countries, and at least another year of preparation. Many, many friends and partners have helped make that possible.

A special thanks, nonetheless, is due for our researchers in the 9 presented countries and their special assistants:

### **Bosnia and Herzegovina:**

Bratović Esad, researcher

Sidik Lepić, researcher

Alma Kadić, researcher

### **Croatia:**

Mario Bajkuša

Andrea Petković, Valentina Juričić and Divna Rogić - textbook analysis.

### **Estonia:**

Kristi Aria, Guest Researcher at Praxis, Head Teacher of Tartu International School

Laura Kirss, Director of Education Policy Program at Praxis

### **Georgia:**

Tamuna Bregvadze

### **Kosovo<sup>1</sup>:**

Ardita Kabashi-Hima, Researcher, Coordinator of Human/Child Rights Projects  
Special thanks to Arben Shala, volunteer in this research

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<sup>1</sup>This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Opinion on the Kosovo declaration of independence. In this book it will be referred to as Kosovo\*.

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**Romania:**

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**Slovenia:**

mag. Živa Gobbo, chair, Focus, association for sustainable development

**United Kingdom:**

Roussel De Carvalho, teacher and SD activist

The authors would also like to thank the following individuals:

Roussel for volunteering to do Phase A of the research for England and for language editing of the book, Marko & Jura for design and DTP work on the national reports and this book, Steve for lessons in statistics and compiling comparative data for analyses, Krešo for excellent visual solutions, Karolina for detailed work on the bibliography, Laura for the idea on presenting methodology. Special thanks to Asja for all her energy, her deep thinking and belief in the project and our work.

It would be impossible to complete this work without the support of the following groups and institutions:

NEPC Executive board and secretariat, Open Society Foundations - Education Support Program, Centre for Educational Research and Development of the Institute for Social Research – Zagreb, all ENjoinED partners who made the learning within the project possible, and special thanks to Focus and Lidija for stepping up in the time of need and teaching us a lesson in solidarity.

Formally, this book is a product of the ENjoinED initiative and the NEPC educational publications edition series NEPC *Comparative Studies in Education*. It reflects the opinions of the authors and not necessarily opinion of member organisation, funders, or NEPC.

## List of Abbreviations

CSO	Civil Society Organisation
CRT	Central Research Team
CSR	Corporate social responsibility and accountability
DESD	Decade of Education for Sustainable Development
EE	Environmental Education
EEA	European Environmental Agency
ESD	Education for Sustainable Development
ESdPi	Education for Sustainable Development Partnership Initiative
HDI	Human Development Index
HPI	Happy Planet Index
IT	Information technology
NEPC	Network of Education Policy Centres
SD	Sustainable Development
SEE	South East Europe
SS	Strong sustainability
UNDP	United Nations Development Programme
UNESCO	United National Educational, Scientific and Cultural Organization
WCSD	World Commission on Sustainable Development
WS	Weak sustainability

## List of tables

1. Details of participating partner organisations in the ENjoinED initiative p. 20
2. Age and number of years in compulsory education in ENjoinED countries and England p. 39
3. Human Development Index (UNDP, 2011b) and Happy Planet Index (Abdallah et al., 2009) and Ecological Footprint (Global Footprint Network, 2010) of the 9 participating countries p. 51
4. Humanity-Environment Interaction framing in percentages (Phase A) p. 80
5. Planetary boundaries parameters and data p. 87
6. Frequency table Phase A of research p. 148

## List of figures

1. Countries with NEPC members p. 17
2. ENjoinED National Report Covers p. 19
3. The ladder of Sustainable Development p. 30
4. Scheme of Sustainable Development: at the confluence of three constituent parts p. 34
5. Sustainability representation depicting how environment and society limit economics p. 34
6. Map of ENjoinED countries p. 39
7. Number of entries concerning ESD found in curriculum per country p. 41
8. Conceptual organisation of the coding matrix elements p. 56
9. Five conceptual groups of Skills and Values (SV1-21) p. 60
10. Five categories of curricular content framing p. 62
11. Research phases in each participating country p. 64
12. Relative representation of different groups of Cognitive Content in the framework curricula (Phase A) of each of the participating countries p. 73
13. Clouds of relative proportions of environmental elements in framework curricula (Phase A) across countries p. 75
14. Relative proportions of selected economic elements in framework curricula across countries in % p. 78
15. Clouds of relative proportions of economic elements in framework curricula (Phase A) across countries p. 82
16. Relative representation (%) of *Market economy* (C4) and *Corporate social responsibility and accountability* (C3) elements within economic cognitive content in framework curricula (Phase A) across countries p. 83
17. Aspects of planetary boundaries and the extent of safe operating space p. 86
18. Relative presence (%) of C2 – *Planetary boundaries*, C5 – *Production and/or consumption* & C6 *Sustainability, sustainable development* in framework curricula (Phase A) across countries p. 88
19. Clouds of relative proportions of socio-cultural elements in framework curricula (Phase A) across countries p. 89
20. Relative proportions (%) of *Cultural diversity and intercultural understanding* (A4) among socio-cultural elements in framework curricula (Phase A) across countries p. 96
21. Relative distribution of *Cultural diversity and intercultural understanding* across curriculum areas overall in framework curricula (Phase A) p. 97
22. Distribution of *Acting with respect to others* across Curriculum areas overall (see Fig. 21 for presentation of areas p. 98
23. Clouds of relative proportions of skills and value groups of elements in framework curricula (Phase A) across countries p. 102

## Executive summary

### Civil rights and obligations are not sufficiently connected to environmental issues in the curricula

**This book is a product of collaborative learning and research project involving 14 organisations and over 30 researchers from 9 countries,** guided by the Central Research Team (CRT) whose members are authors of this book. The research was conducted in 2011 based on the education documents in use in the respective countries at the time. Chapter 1 describes the *ENjoinED initiative and the participating organisations* as well as *the objectives of the research and this study*, Chapter 2 defines our *understanding of Sustainable Development (SD) and Education for Sustainable Development (ESD)*, Chapter 3 presents the *ENjoinED countries' education and sustainability profiles*, Chapter 4 *the methodology and limitations of the research design and process*, and Chapter 5 discusses the *comparative research findings*. The final chapter is followed by *Concluding Remarks* and *Annexes* presenting the Coding Matrix, some Phase A quantitative data and individual country policy conclusions in greater depth.

**The main aim of the research was to identify, collect and systematically present the existing content most relevant to Sustainable Development in the national curricula of the participating countries in order to provide evidence for policy change.** To collect the evidence the research team used content analyses on 3 levels of educational documents: a) compulsory education framework curricula b) selected subject curricula and c) selected textbooks. In second and third phases (B & C) of the research process the CRT decided to narrow the research down to most ESD-content loaded instructional documents. Therefore, 6 subject curricula and a very small sample of 3 textbooks per country were analysed.

As a tool for content analyses the CRT designed the Coding Matrix based on the UNESCO DESD review of contexts and structures for education for sustainable development (2009). The matrix was divided into cognitive content elements and skills and values elements. The Cognitive content elements were further divided into environmental, socio cultural and economic content. There were altogether 26 cognitive elements and 21 skills and values elements. Following the collection of data the Skills and Values elements were grouped into 5 groups: 1) Values of respect and responsibility; 2) Reflexivity and complexity understanding; 3) Managing change and uncertainty; 4) Community cooperation and 5) Basic science skills.

To better inform the country researchers each coding matrix element was described in detail and the researchers were instructed to assign codes by relying on understanding the concept behind the words, rather than an automatic keyword-search. The matrix also provided framing of the content according to human-environment interaction while on the textbook level it specifically looked at student tasks and coded them as rote or process learning tasks. There were obvious limitations to this work, most notably the subjectivity present in the work conducted in 9 countries by 9 research teams in 9 languages. The CRT reviewed all the findings and held several seminars throughout the research process to align the respective country cases as much as possible. The data collection produced an extremely rich data set that is not fully explored in this book. The authors concentrated on the level of framework curricula as the data at that level is the most comparable. Thus the findings presented in this book are mostly based on this phase of the research.

**Our findings show that most of existing ESD-knowledge in almost all the countries is about social and cultural aspects of SD**, which was unexpected given the roots of ESD in environmental education and the presence of latter in schools in the region for over 20 years. However among the said socio cultural aspects 'Gender equality' is the least represented and it is not included at all in some countries. 'New forms of governance' is the second least represented socio-cultural element. Of the economic elements 'Market economy' and 'Corporate social responsibility and accountability' seem not be among the topics present in compulsory schooling. This leads to the question from UNECE 2010 report: *Could education be contributing to unsustainability?* gaining a strong relevance in the region. Considering the importance of 'Agriculture' and 'Rural development' in the region it is worrying that those elements do not fare much better and are the least represented of all environmental elements.

**Of the skills and values elements Respect, Responsibility, Reflexivity and complexity are the foundational values in the curricula.** 'Managing change and uncertainty' is well represented in some countries, but only as something that is talked about and not practiced. 'Futures thinking' and 'Decision-making' which are important for transition from un- to sustainability are also present, but mostly as facts about change, not skills for change. 'Community cooperation' is among least represented skills groups in all countries and the findings show very little community cooperation practice encouraged. Where community cooperation appears in the curricular documents it is in form of notional encouragement of humanistic values in general.

In conclusion, some ESD content is already present in the existing national curricula and it is mostly about social-cultural aspects of sustainability. **If sustainable development is the goal of societies, ESD should be one of the foundational principles of the curricula, and currently it is not.** Where it is stated as a goal of education, this is only at a very general level. There is, on the whole a lot of the relevant content present, albeit not sufficiently distributed across mundane and novel schooling topics. **Shaping this existing content into a unified ESD agenda is the first task of focusing educational systems on sustainability for future generations.**

There seems to be no need for new subject or special schooling material. Having said that, **economic and environmental elements need greater inclusion in the national curricula in some countries.** The most striking message is that the educational documents currently do not concentrate on education for individual empowerment, personal action and or responsibility. **It is our conviction that education should help students to become engaged in shaping sustainability in the future which would require significant changes in the framing of the present content in national curricula.**

Whilst it is by no means the fault of the future generations that the planet on the whole is at the brink of economic and environmental instability, whilst experiencing an unprecedented polarisation of privilege and deprivation, it is the world that they will inherit and make a living in. **They need to be prepared for a world that is different from the one we were schooled in, as well as instructed to the best of our ability how to avoid producing further irreversible damages whilst striving for wellbeing.** The next generation in most of the countries included in this project are globally well positioned to make a leap into a more sustainable existence, but their most basic educational institutions are still not able to teach them clearly how to do this. Learning by comparison and practice is the first step for these countries to change from the development path that puts excessive pressure on the environment whilst deepening social inequalities to a different model that respects citizens' aspirations, ecosystems' limits, common resources and future generations on a shared planet.

# Chapter 1

*EN-what?: the ENjoinED initiative and the participating organisations*





## 1. EN-what?: the ENjoinED initiative and the participating organisations

The ENjoinED initiative is a non-formal network of Civil Society Organizations (CSOs) and research institutions with different backgrounds – environmental organisations joining educational institutions – that promotes Education for Sustainable Development (ESD) through research, advocacy and training in 8 countries: Bosnia and Herzegovina, Croatia, Estonia, Georgia, Kosovo\*, Macedonia\*\*, Romania and Slovenia. It was born out of the Education for Sustainable Development Partnership Initiative (ESdPI) project, funded and supported by the European Commission's IPA funds for strengthening partnerships among CSOs, which was coordinated by the Network of Education Policy Centers (NEPC). Based on its experience in working within the post-communist Eurasian region, NEPC recognised that there is a growing need to address ESD in countries where Education for Sustainable Development is still rarely considered in the formal education system but is readily equated with environmental protection education.

Moreover, in the NEPC region, ESD is rarely used as one of the guiding principles for curriculum development. Therefore, the ESdPI project was envisaged as a multi-layered approach to promote, advocate and help the implementation of ESD in partner countries.



Figure 1. Countries with NEPC members

These long term and rather complex goals could be achieved through:

- a. Assessing the current situation related to Education for Sustainable Development within the content of the national curricula of the eight participating countries in order to identify a possible shift of education policy to include the missing ESD content into the national curriculum;
- b. Developing and delivering training activities to those who can and must promote Sustainable Development: teachers, public authorities as well as small and medium-size businesses;
- c. Creating a platform of civil society organisations with different backgrounds and competences in order to exchange know-how to attempt a shift in social consciousness towards Sustainable Development and promote ESD to the wider community.

The members of the ENjoinED initiative come from two sectors: all the participating educational CSOs and researchers are long-term members and partners of NEPC while the environmental and sustainable development CSOs were invited to join the initiative at the time of applying for the project. Although Sustainable Development (SD) is understood to consist of three pillars (Economic, Socio-cultural and Environmental) common experience in the region suggests that it is grassroots activist organisations with an environmental background are best placed to join the initiative. The reasoning behind this was that these activist environmental organisations seemed to be the only organisations that actively promoted all aspects of SD within the partner countries and were ready to broaden social and economic platforms of SD in their work. Sixteen (16) partner organizations participated in the project activities of the *ENjoinED* initiative (cf. Table 1.) in 2011, of which - 10 were educational and 6 were environmental organisations.

National reports on the existing ESD content in each of the participating countries are available for download in national languages and English from:

<http://www.enjoined.edupolicy.net/index.php/en/publications.html>.

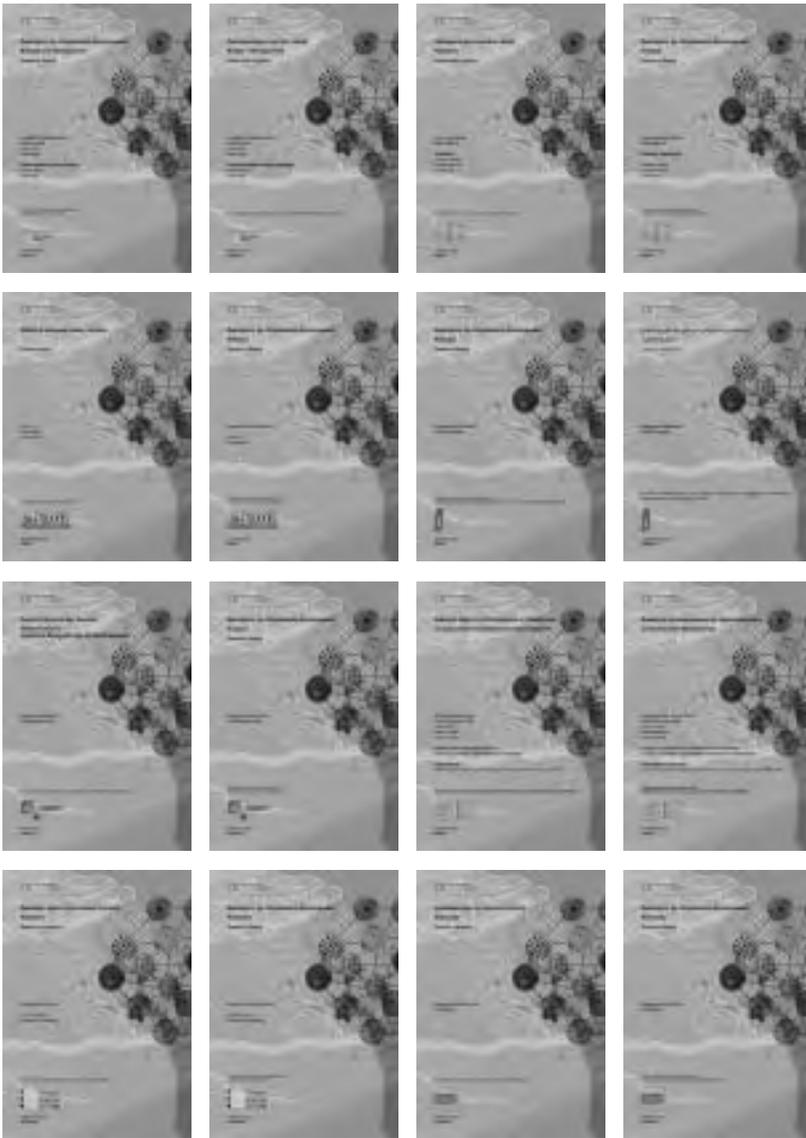


Figure 2. ENjoinED National Report Covers

Table 1. Details of participating partner organisations in the ENjoinED initiative

Organisation, Country	Status in the project Type of organisation	Role in the project
Network of Educational Policy Centers International	Project Coordinator INGO Educational	Overall coordination of the Initiative and all of its activities Quality control of the Initiative Providing a member of the CRT Regional and International Advocacy – Educational Policy and General Public
proMENTE social research, Bosnia and Herzegovina	Partner NEPC member NGO Educational + <sup>3</sup>	Research for Bosnia and Herzegovina Statistical analysis for comparative work Developing Module for SME-s Initiative WEB design and maintenance Country Advocacy – Education Policy
Eko Akcija Bosnia&Herzegovina	Associate partner NGO environmental	Developing Module for SME-s Country Advocacy – General Public
Zelena Akcija, Croatia	Partner NGO Environmental	Input to the Initiative on Climate change and renewable energy Developing Modules for Public Authorities Country Advocacy– General Public
Forum for Freedom in Education, Croatia	Partner NEPC member NGO Educational	Research for Croatia Developing the module for Teachers Country Advocacy – Education Policy
Centre for Educational Research and Development Institute for Social Research Zagreb, Croatia	Associate partner NEPC member Public Research Institute Educational +	Initialising the idea and conceptualizing the project Input on educational theory, Sustainable Development and research methodology Providing a member of the CRT Evaluation of the initiative
Praxis Center for Policy Studies, Estonia	Partner NEPC member NGO Think tank Educational +	Research for Estonia Input to the initiative on Estonian policy for including ESD Developing the module for Public Authorities Country Advocacy– Education Policy
Stockholm Environment Institute Tallinn centre, Estonia	Associate partner NGO Think tank Environmental +	Providing a member of the CRT Input to the initiative on Estonian policy for including ESD Developing the module for Public Authorities Country Advocacy– Environmental

+<sup>3</sup> signifies an organisation whose work includes other fields apart from that which is specified in the table. i.e. education or environment

Organisation, Country	Status in the project Type of organisation	Role in the project
Kosova Education Center, Kosovo*	Partner NEPC member NGO Educational	Research for Kosovo* Developing the module for Teachers Country Advocacy – Education Policy
MAR Center for Sustainable Development, Kosovo*	Partner NGO Environmental	Developing Module for SME-s Country Advocacy – General Public
Macedonian Civic Education Center, Macedonia**	Partner NEPC member NGO Educational	Research for Macedonia** Developing the module for SME's Country Advocacy – Education Policy
Planetum Strumica, Macedonia**	Partner NGO Environmental	Developing Module for SME-s Country Advocacy – General Public
Foundation Centre Education 2000+, Romania	Partner NEPC member NGO Educational	Research for Romania Providing a member of the CRT Developing the module for Teachers Country Advocacy – Education Policy
Focus Association for Sustainable Development, Slovenia	Partner NGO Environmental +	Research for Slovenia Developing the module for Teachers Country Advocacy – Education Policy & General Public
International Institute for Education Policy, Planning and Management, Georgia	Partner NEPC member NGO Educational	Research for Georgia Country Advocacy – Education Policy
Mr Roussel de Carvalho, UK/England	Physics Teacher and SD activist	Research for England – Phase A

## Management of the project

The formation and operation of the ENjoinED initiative was managed by NEPC. For the purpose of national and comparative research, NEPC has established a Central Research Team (CRT) which is composed of experts from the partner countries (Dr **Mladen Domazet** - Center for Educational Research and Development of Institute of Social Research - Zagreb, Croatia; Dr **Daniela Dumitru** – Foundation Center Education 2000+ - Bucharest, Romania; **Lana Jurko** – Network of Education Policy Centers; and Dr **Kaja Peterson** - Stockholm Environment Institute Tallinn centre - Estonia). The CRT was responsible for designing the research methodology, providing framework for data analysis and coordinating research efforts in the country teams. The CRT also developed the comparative analysis of results based on the partners' original research work.

## Objectives of the ESdPI research and this study

The aims of the research were to identify, collect and systematically present the existing content directly relevant to Sustainable Development (SD) in the national curricula in nine Eurasian countries, based on a uniform coding matrix and thorough research process. The aim of the research was not to compare the existing national educational documents to the ideal or universal ESD curriculum, especially since it is not available. An ideal or universal ESD curriculum would be a formal education curriculum for sustainability education identical in all countries and educational systems. Although trying to develop an ideal or universal curriculum would be a fruitless attempt, an existing ESD curriculum (for formal education in a country, region or worldwide), however “flawed”, would have been helpful. As we have not found one, we made the attempt to draw attention to some elements that an ESD-oriented curriculum might ideally contain. Also, the research aimed to provide guidance as to the issues that needed to be addressed to transform an existing national curriculum into a future curriculum where Sustainable Development is fully embedded in the teaching and learning. One of the premises was that the curricula of compulsory education and its instructional methods play a formative role for future citizens, stakeholders and decision-makers.

This book provides a comparative analysis of the research that the ENjoinED Initiative (hereinafter referred as the 'project') has undertaken on the national curricula of the 9 participating countries (Bosnia & Herzegovina, Croatia, Estonia, Georgia, Kosovo\*, Macedonia\*\*, Romania, Slovenia and UK/England). The methodology designed by the project's Central Research Team involved three separate levels of analysis (i.e. Framework Curriculum, Subject curricula and Textbooks). A comprehensive list of cognitive content elements, and also of skills' and values of ESD were developed for the purposes of the analysis at these three levels. The list of ESD elements was derived from relevant theoretical and practical sources described in SD literature.

The book is based on a rich dataset accumulated by this research. In the analysis of the country results, both quantitative and in-depth qualitative approaches have been applied to draw conclusions on the current ESD situation in the nine countries so as to provide recommendations for improvement. The methodology of the analysis is further explained in chapter 4 (Methodology).

This book is divided into five blocks. The first block addresses the concepts of Sustainable Development as well as Education for Sustainable Development. The educational and sustainability profiles of the participating countries are described in the second block, followed by the methodology of the research in block three. The results of the research block are divided into two sections: one describes the cognitive content findings, and the other provides insights into selected process skills, distinguishing ESD from other purpose-based educational contents (e.g. education for peace, entrepreneurship education). The selection of elements presented was based on the comparative analysis of national curricula in participating countries which revealed commonalities and differences in addressing SD contents. Finally, conclusions are drawn and recommendations are made for further advancement of ESD in national curricula.



## **Chapter 2**

*Notions of SD and ESD*





## 2. Notions of SD and ESD

### Sustainable Development

According to the World Commission on Environment and Development (WCED) Report “Our Common Future”, also referred to as the Brundtland Report, sustainable development marks the ability of “humanity to /.../ ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development [WCED], 1987, p. 8). Thus, the report called for the need to look beyond today’s needs and short-term effects of decisions.

The pursuit for Sustainable Development continued at the Rio Summit in 1992 when Agenda 21 was signed and that commitment was renewed in the Summit on Sustainable Development in Johannesburg in 2002 (Rio+10). In 2012, the Rio Process shall celebrate its 20<sup>th</sup> anniversary, but the definition of SD is still evolving and this evolution has been marked by attempts to develop a clear notion of what exactly is SD. However, it has been noted that defining SD means actually implementing SD. Today, sustainability is firmly embedded in the language of development - locally, globally and at every level in between, but according to several authors the popularity of the notion has been accompanied by more verbal adherence than practical implementation (Gibson, Holtz, Tansey, Whitelaw, & Hassan, 2005). Moreover, the practice at all levels mostly still follows the mainstream economic growth agenda. The difficulties to apply SD derive from the need for fundamental changes in values and perceptions, but also political and administrative structures.

The notion of SD has interested many researchers and practitioners. Some argue that the complexity of the SD concept lies actually in its simplicity. For example, Neumayer (2010) compares SD to freedom or peace, that is something to which no one would object in education. But it has become difficult to make the concept operational.

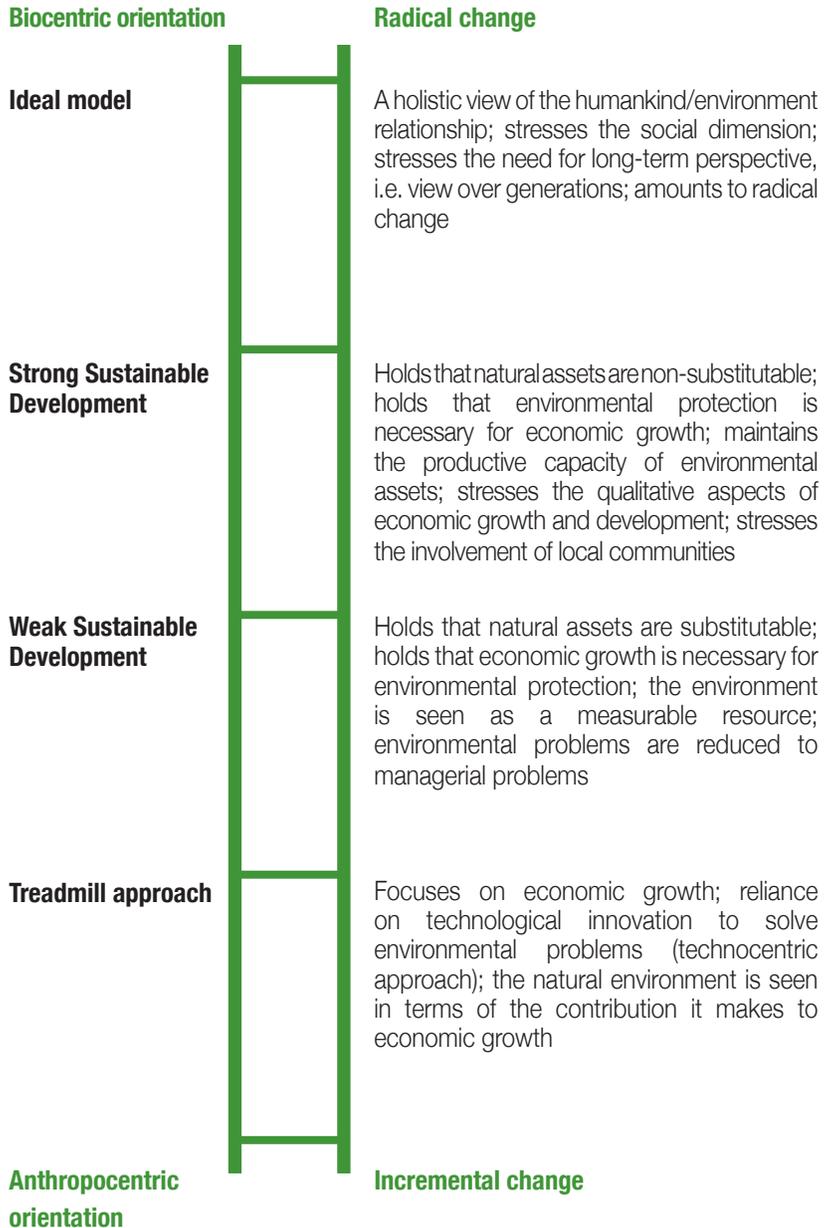
Weaver and Rotmans (2006) argue that the difficulties to put the SD concept into operation are caused by the normative, subjective and ambiguous nature of SD. Normative, because future generations are implicitly supposed to have at least the same resources as the current generation, therefore the norm set is an intergenerational equity. Subjective or value-laden, because it requires an estimation of what the needs of future generation will be and how these

“Students need to realize that some environmental changes cannot be reversed.”  
(Slovenian curriculum)

needs can be fulfilled, but the authors argue that what is worth saving for future generations cannot be objectively established. The definition of SD is also claimed to be ambiguous due to not only the trade-offs it requires between socio-cultural, economic and ecological developments that can be valued and weighed differently, but also because the two contradicting goals of satisfying the needs of current and future generations are simultaneously aimed at. Since SD is very much context dependent (social, cultural, political, economic and other) and the interpretation of sustainability changes between contexts and over time as new knowledge emerges, Weaver and Rotmans (2006) propose the use of 'sustainability interpretation' rather than 'sustainability definition'.

In addition to the societal context, the interpretation of SD may depend on other perspectives, such as on the extent of trade-offs made between values (economic, social and environmental). Two different visions of the sustainability of such trade-offs in global development have been classified by researchers (Bell & Morse, 2008; O'Neill, Holland, & Light, 2008; Neumayer, 2010). Those who believe the environment is critical for our and for the next generations' survival, and that any damage will have negative consequences, are regarded as having strong sustainability vision. Those who believe that environmental quality can be traded for economic gain are regarded as having weak sustainability vision. The latter is claimed as the dominating vision in global economy by Bell and Morse (2008) and O'Neill et al. (2008). Interestingly enough, the two visions – Weak Sustainability (WS) and Strong Sustainability (SS) - have been regarded as mutually exclusive rather than as two ends of a spectrum (Bell & Morse, 2008). According to O'Neill et al. (2008) and Neumayer (2010), the debate over the Weak and Strong Sustainabilities is about 'human' and 'natural capital' and the extent to which both capitals can be substituted for, or complemented by each other, and how far substitution is possible. Neumayer (2010) argues that the essence of the SS is that natural capital is regarded as non-substitutable in the production of consumption goods, in its capacity to absorb pollution and as direct provider of utility in the form of environmental amenities. While the WS paradigm regards the natural capital as being essentially substitutable in the production of consumption goods and as direct provider of utility, calls Neumayer (2010). O'Neill et al. (2008) provide two further conceptions of substitutability to consider in Sustainable Development: technical and economic substitutability of the natural capital. In the former case one good is a substitute for another if it achieves the same end, i.e. it does the same job or performs the same function

as the original. In the latter, one good for a person is a substitute for another if it does not change the overall level of welfare of that person. In this case, a loss in good A, can be compensated by a gain in another good B, in the sense that the person's level of welfare remains unchanged. With these arguments, O'Neill et al. (2008) raises the question as to whether these substitutions are acceptable for the people in the debate over WS and SS. The authors argue that acceptability questions are typically subjects of environmental decision making. The different approaches to Sustainable Development can also be interpreted as reflecting different ideological systems. Jones et al. (2005) argue that if a government states its commitment to Sustainable Development, this could mean a variety of things, and in practice, could result in a broad range of policy outcomes. According to Jordan and Lenschow (2008) integration of environment into policies is 'Weak' when sectors simply take environmental considerations into account without giving them the 'principled priority'. Some authors claim that the definition of Sustainable Development by the Brundtland Report (WCED, 1987) (e.g. Jones et al., 2005) is so broad that it allows a wide spectrum of interests and perspectives, even conflicting ones, to agree in the concept. Jones et al. (2005) develop further the 'ladder of Sustainable Development' first introduced by Baker, Kousis, Richardson, and Young (1997). The 'ladder' could be further adapted by adding the issue of substitutability of natural assets to the Weak and Strong sustainability rungs of the ladder (Figure 3). Radical changes are believed to be necessary to move human development to sustainable course, i.e. from WS to SS and to the ideal model – a holistic view of mankind and the environment.



**Figure 3.** The ladder of Sustainable Development. Adapted from *The politics of sustainable development: Theory, policy and practice within the European Union* (p. 9), by S. Baker, M. Kousis, D. Richardson, and S. Young (Eds.), 1997, London: Routledge and from *Strategic environmental assessment and land use planning: An international evaluation* (p. 3), by C. E. Jones, M. Baker, J. Carter, S. Jay, M. Short, and C. Wood, 2005, London: Earthscan.

In summary, the concept of Sustainable Development has created a great challenge for the socio-economic development. The concept of Weak and Strong sustainability has questioned the limits of the Planet Earth to cope with the growing demand for resources and the thresholds for harmful impacts. Rockström et al. (2009a) have identified the Earth-system processes and associated thresholds which, if crossed, generate unacceptable environmental change. This group of researchers has presented evidence that three boundaries out of nine Earth-system processes (climate change, rate of biodiversity loss, nitrogen cycle) have been overstepped already. The debate over WS and SS is largely about the options for substitutability of natural assets, on the one hand, and the acceptability of these by people and communities on the other hand. Understanding of the SD concept presumes looking beyond today's needs and short-term effects of decisions. Developing this ability has therefore become the focus of the Education for Sustainable Development.

## Education for Sustainable Development

While the roots of *Education for Sustainable Development (ESD)* could be traced back to the early 1970s, ESD was formally tabled at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992. Among other landmark publications by UNCED, it also resulted in „*Agenda 21*“ which provided a comprehensive action plan to be taken globally, nationally and locally by UN agencies, governments and major organisations and networks to reduce the human impact on the environment. Agenda 21, the Rio Declaration on Environment and Development and the Statement of Principles for the Sustainable Management of Forests was adopted by 178 Governments. The *Commission on Sustainable Development (CSD)* was created in December 1992 to ensure effective follow-up of UNCED and to monitor and report on implementation of multilateral environmental agreements.

Chapter 36 of Agenda 21 is specifically addressing education, training and public awareness. *UNESCO* has been designated as Task Manager for ESD to address four overarching goals:

- promote and improve the quality of education: the aim is to refocus lifelong education on the acquisition of knowledge, skills and values needed by citizens to improve their quality of life;
- **reorient the curricula: from pre-school to university, education must be rethought and reformed to be a vehicle of knowledge, thought patterns and values needed to build a sustainable world;**
- raise public awareness of the concept of Sustainable Development: this will make it possible to develop enlightened, active and responsible citizenship locally, nationally and internationally; and
- train the workforce: continuing technical and vocational education of directors and workers, particularly those in trade and industry which will be enriched to enable them to adopt sustainable modes of production and consumption.

Although there appears to be widespread consensus about these goals, there is less agreement about the meaning of ESD. Just as is the case with Sustainable Development, there is not one single correct interpretation and use of ESD. ESD is arguably seen as the total sum of diverse ways to arrive at a 'learning society' in which people learn from and with one another, collectively becoming more capable of withstanding setbacks and dealing with sustainability-induced insecurity, complexity and risks. From this point of view, ESD is about engaging people through education and learning opportunities - in SD-related issues, developing their skills to give meaning to SD and to contribute to its development, capitalising on the diversity of those involved...

In order to bring the ESD into the attention of governments and the public, the United Nations has declared a *Decade of Education for Sustainable Development (DESD)*. Resolution 57/254 on the DESD (2005–2014) was adopted by the United Nations General Assembly in December 2002, shortly after the World Summit on Sustainable Development (Rio plus 10) held in Johannesburg in August/September of the same year. This resolution requested *UNESCO*, as the designated lead agency for overseeing the Decade, to develop an *International*

*Implementation Scheme (IIS)* which would also clarify the relationship of the DESD with existing UN-supported educational processes (e.g., the Dakar Framework for Action and the United Nations Literacy Decade). The finalized version of the IIS was presented and approved by the United Nations General Assembly in September 2005. The basic vision of the Decade is that of a world in which everyone has the opportunity to benefit from education and learn the values, behaviours and lifestyles required for a sustainable future and for positive societal transformation. DESD seeks to promote the meaningful development and implementation of ESD on all geographical scales (locally, nationally, regionally and internationally) with the involvement of a wide range of stakeholders. At the start of the Decade, this vision was translated into four objectives:

- 1) facilitate networking, linkages, exchange and interaction among stakeholders in ESD;
- 2) foster an increased quality of teaching and learning in ESD;
- 3) help countries progress towards and attain the Millennium Development Goals; and
- 4) provide countries with new opportunities to incorporate ESD into education reform efforts.

The project from which this study originates addresses all the four goals of DESD, but specifically the goal of networking, linkages and learning among education centres in Europe in ESD, fostering the increased quality of teaching and learning in ESD as well as sharing experiences and knowledge on ESD.

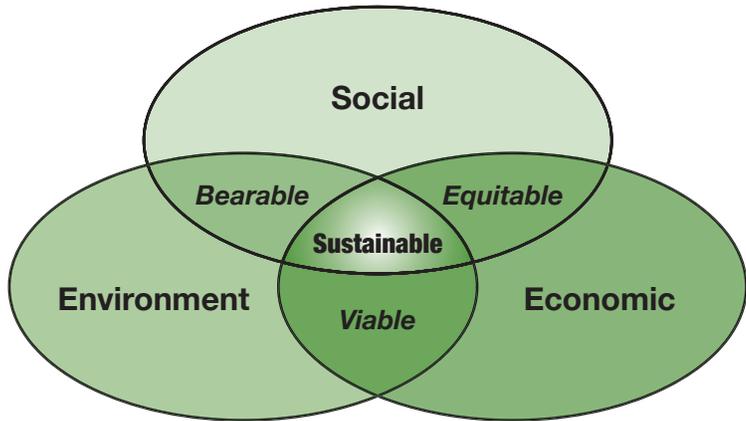


Figure 4. Scheme of Sustainable Development: at the confluence of three constituent parts. Modified from Sustainable development (n.d.), In *Wikipedia*, Retrieved 21st January 2011 from: [http://en.wikipedia.org/wiki/Sustainable\\_development - cite\\_ref Adams2006\\_5-0](http://en.wikipedia.org/wiki/Sustainable_development - cite_ref Adams2006_5-0)

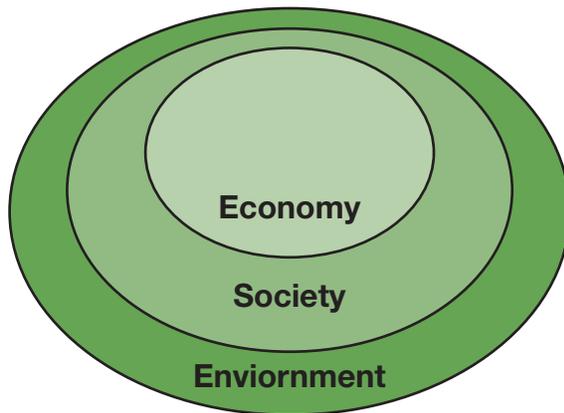


Figure 5. Sustainability representation depicting how environment and society limit economics. Modified from *Green Economics* (p. 36-37), by M. Scott Cato, 2009, London: Earthscan

## Sustainable Development in the national curricula for compulsory education

Tilbury (2007, p. 119) suggests that sustainability is about challenging our mental models, policies and practices and not just about accommodating new dimensions into current work or finding common ground between related existing programmes. She holds that learning-based change for sustainability challenges educators to think beyond raising awareness and go further than merely involving learners in one-off activities such as cleaning-up or planting trees. Though these are useful and beneficial activities, what is essential is to encourage learners to develop critical and systemic thinking skills, enabling them to get to the core of the issues. This reflects the major shift in thinking from **environmental education (EE) to education for sustainability (ESD)** (Tilbury, 2007, p. 120). Wals points out that “there are different interpretations of ESD both in terms of content, educational process and in terms of how it relates to EE and indeed to other so-called adjectival educations such as health education, global education, development education, consumer education and so on” (Wals, 2010, p. 13). According to Wals, these are narrow and broad interpretations, similarly to the interpretations of EE over several decades. When viewed broadly, ESD stresses the link between the environmental and the socio-cultural, between the local and the global, the past-present and future, and the human and the non-human world. Narrow interpretations tend to emphasize the environmental and ecological dimensions of SD (Wals, 2010).

In terms of curricula content, can either encompass all of ESD, or have significant overlaps with ESD, but EE is insufficient to replace ESD as it lacks the socio-cultural and economic dimensions (see Methodology, next chapter). Conceptually, ESD also contains important pedagogical elements which are somewhat harder to capture with the current research, and which includes *social learning, participation* and *capacity-building*. On top of these, some countries are moving away from the anthropocentric (or human-centred) perspective towards eco-centric interpretation of Sustainable Development through references to living in harmony with nature and the rights of other species and the non-human world. It is clear from the above that ESD is not just a matter of information, but is setting the ground for a gradual change - a learning-based change. This comes from the perspective that dominant current models of development appear unable to balance the needs of the people and of the planet in the pursuit of peace and prosperity. Yet, content-wise SD is mainly portrayed through three dimensions and their interrelation in time (past-present-future) and in space (near-far).

ESD] must be seen as a comprehensive package for quality education and learning within which key issues such as poverty reduction, sustainable livelihoods, climate change, gender equality, corporate social responsibility and protection of indigenous cultures, to name a few, are found. (Wals, 2009, p. 26)

ESD supports five fundamental types of learning to provide quality education and foster sustainable human development – learning to know, learning to be, learning to live together, learning to do and learning to transform oneself and society. (Wals, 2009, p. 26)

[ESD] is a learning process (or approach to teaching) based on the ideals and principles that underlie sustainability and is concerned with all levels and types of education. (Wals, 2009)

*Sustainable social development (people)* is aimed at the development of people and their social organisation, in which the realisation of social cohesion, equity, justice and wellbeing plays an important role.

*A sustainable environmental development (planetary boundaries)* refers to the development of natural ecosystems in ways that maintain the carrying capacity of the Earth and respect the non-human world.

*Sustainable socio-economic development (prosperity)* focuses on the development of the socio-economic infrastructure, in which the efficient management of natural and human resources is important. It is the finding of balanced ways to integrate these dimensions in everyday living and working that poses, perhaps, the greatest challenge of our time as this requires alternative ways of thinking, valuing and acting.

Put succinctly, in the SD context it is important to consider the environmental and socio-economic development in cross generational (i.e. intergenerational) perspective.

According to the DESD Monitoring and Evaluation document by UNESCO (Wals, 2009), ESD should be focused on development of knowledge, capacities, qualities or competences required for active, critical and meaningful contribution to Sustainable Development and on the transfer of appropriate sets of knowledge, attitudes, values and behaviour.

However, ESD content and implementation still remain a matter of debate around the world. It is now understood that more room will be left for localisation and contextualisation; and national and regional debates towards the development of the meaning are increasingly important.

## **Chapter 3**

*ENjoinED countries' education and sustainability profiles*





### 3. ENjoinED countries' education and sustainability profiles

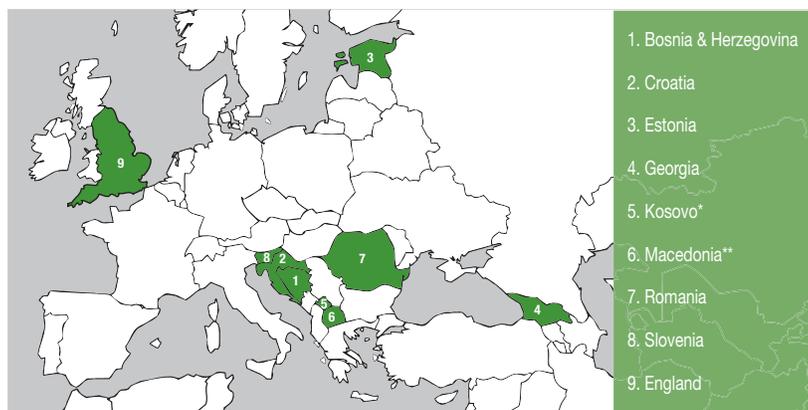


Figure 6. Map of ENjoinED countries

“...describe a social environment in which the literary character lives and the ways in which it affects his/her behaviour and feelings” (Bosnia and Herzegovina curriculum)

#### Compulsory Education

The educational systems of the eight participating countries and England<sup>4</sup> in the ENjoinED project vary extensively, including length of basic education ranging between 8 to 12 years of compulsory schooling (Table 2).

Table 2. Age and number of years in compulsory education in ENjoinED countries and England

Country	Age of compulsory education	Number of years in compulsory education
Bosnia and Herzegovina	6-15	9
Croatia	6 – 14	8
Estonia	7 – 16	9
England	5 – 16	11
Georgia	6-14	9
Kosovo*	6-15	9
Macedonia**	6-18	12
Slovenia	6-15	9
Romania	6-16	10

<sup>4</sup>England is not a part of the ENjoinED initiative and does not fall into the group of Eastern European countries, but was included in the comparative research findings to enable easier conceptual linking to other globally available research on ESD. Cf. section on England below.

The starting age of schooling varies from 5 – 7 years of age, while exit from schools range between 14 to 18 years of age. This is an important aspect to note, especially in regard to the findings of the analysis, since there is more classroom time for everything including SD, when schooling is expanded over 12 years rather than 8 years of compulsory education. For the purposes of the research, only the compulsory education was considered.

## Types of Educational Documents

Since the basis of our research is national framework curricula or the national equivalent, it is important to categorise these documents according to different types. Curriculum, even as a term, is still understood differently in different countries and this is especially true in transitional countries. Therefore, not only did not all countries have the Framework Curriculum (Slovenia) but those that had it, have different types and different understanding of it. For example, although both Bosnia and Herzegovina and Croatia have a document called Framework Curriculum, in both cases this is still a detailed, normative, and to a large extent, prescriptive document that serves more as an operational document (syllabi). For Slovenia and England, parts of their operational documents were used for the initial Phase A of the research. The CRT, together with national researchers, decided which documents will be analysed or in cases of Slovenia and England, which parts of which documents will be analysed. This greatly influenced the comparativeness of our findings and has to be taken into consideration in reading them. For example, some of the documents examined, such as the Bosnia and Herzegovina (or more precisely, the Sarajevo canton, cf. below) are rather detailed and prescriptive while others are concise outlines of basic principles, values and goals of national education such as Macedonian Concept for a 9 year primary education (2007). Therefore, all of our findings had to be presented through relative proportions rather than frequencies (for frequencies cf. Tables in Annex 2) as the countries with detailed documents would easily skew all the results. Examining Figure 7 below it can be seen that in Bosnia and Herzegovina and Croatia, where research had to rely on the detailed documents, the absolute number of entries concerning ESD found is three times higher than in, for example, Macedonia\*\*, Romania or Georgia (for a full list of different Coding Matrix item frequencies see Annex 2 at the end of the book).

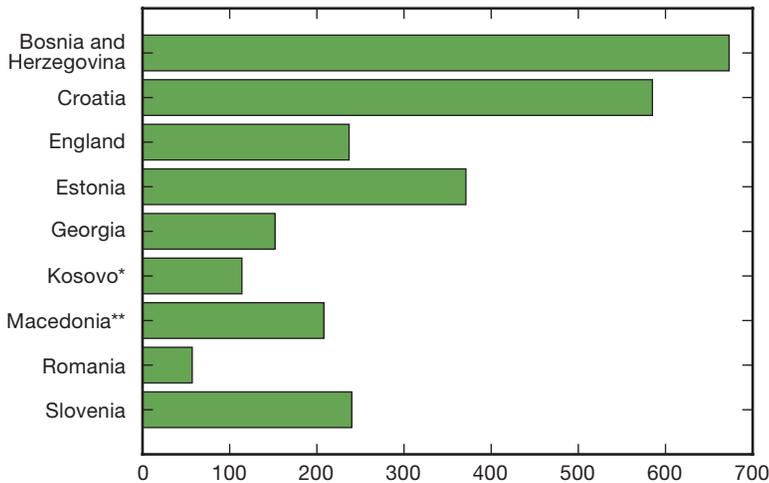


Figure 7. Number of entries concerning ESD found in curriculum per country

## Bosnia and Herzegovina

The educational legislation of Bosnia and Herzegovina is very complex, fragmented and decentralised as it is the case with its overall legislation / administrative system which is divided into cantonal, entity and national levels. Therefore, it is difficult to talk about the Bosnia and Herzegovina education system in terms of one, coherent system. The reform process of compulsory education in Bosnia and Herzegovina is an on-going process since the end of the war in 1995. What has changed is the number of compulsory years of schooling from 8 – 9 (2003 – 2009) and the introduction of the new framework curriculum in 2005. Each curriculum contains the agreed Common Core Content (CCC) and it may contain parts that could be selected by the entity or canton and by the school. Although this should provide quite a lot of freedom to the schools and teachers it is a rather detailed document that prescribes:

- what will students learn / achieve / develop;
- how do students need to learn;
- what do students learn, when and in what order;
- how to evaluate students' performance;
- intended learning outcomes for students;
- all subjects programs;
- rules that govern how these subjects can be combined into an approved curriculum, including a common core, elective and optional subjects.

Compulsory education in Bosnia and Herzegovina lasts 9 years (age 6 to age 15). The 9 years are divided into three year cycles with 1<sup>st</sup> - 6<sup>th</sup> grades being class teaching and 7<sup>th</sup> - 9<sup>th</sup> grades being subject teaching.

Legislation on SD as such does not exist on cantonal, entity or national levels. Sustainable Development is incorporated in existing laws on agriculture, forestry, water, energy, regional development, nature protection but these are not linked either to the educational system or to the educational process. Thus, SD as such is not a component of the educational process. Sustainable Development as a wider concept than environmental protection is still not understood by any of the educational stakeholders (school management, teachers, and students) and therefore Education for Sustainable Development has been reduced to education on environmental protection through school subjects (e.g. Biology, My environment, Nature and Society etc.) and the work of Eco and school clubs. One of the missing elements is the importance of changing one's own behaviour (children, parents, schools, governments), which is a learning goal difficult to achieve, but it is the one ideally suited to the elementary school context. Nonetheless, good practice examples which support the idea and the concept of SD in education exist in additional extra-curricular school activities.

## Croatia

Over the past 20 years, the Croatian educational system has been in a state of permanent change and reform, where the philosophies and approaches to education, as well as basic documents that the system relies on, have been constantly changing. The new reform is currently underway. The educational system in Croatia includes four levels: pre-school, primary, secondary and tertiary/higher education. Compulsory education lasts 8 years (age 6 to age 14) in 2 cycles: 1<sup>st</sup> - 4<sup>th</sup> grades (class teaching) and 5<sup>th</sup> - 8<sup>th</sup> grades (subject teaching). The number of compulsory years has been under constant discussion within the professional public: in the past two years there have been plans to extend compulsory education to include 2 extra years of high school, which would then expand compulsory education to 10 years. The document the current system relies on is Croatian National Educational Standards (CNES), from 2005. However, in 2010, the government passed a new document - National Curriculum Framework (NCF) - this document has still not become operational. However, as it is about to be introduced, we decided to analyse both CNES and NCF for the purpose of the research (NCF in Phase A and CNES in Phase B).

As for how Sustainable Development and Education for Sustainable Development are concerned, these are not in any way especially prominent themes in the NCF, nor are these terms often mentioned in the document. Yet the few places where Sustainable Development is mentioned can illustrate how the document understands the concept of Sustainable Development. The chapter *Educational Values and General Educational Goals* contains the following passage: “fundamental educational values of the National Curriculum Framework arise from the commitment of Croatian education policy to the complete personal development of students; to fostering and developing the national, spiritual, material, and natural heritage of the Republic of Croatia; to European co-existence; and to the creation of a knowledge-based society that will enable sustainable development” (Ministry of Science, Education and Sports of Republic of Croatia [MZOS], p. 14). Sustainable Development is thus, recognized and defined as a sole concept of development where education, education system and a knowledge-based society play a decisive role in its facilitation. Therefore, it can be expected that the document itself will include socio-cultural, environmental and economic aspects related to Sustainable Development, and will promote skills and values inherent to Sustainable Development. It is important to note that certain segments of Sustainable Development are contained in the core values of the NCF, particularly the segments related to the socio-cultural aspects of Sustainable Development.

## Estonia

Estonia is in the second wave of educational reforms since its re-independence in 1991. The compulsory education in Estonia lasts 9 years (age 7 - age 16). The compulsory education is structured in 3 cycles: grades 1 - 3, grades 4 - 6 and grades 7 - 9. First 2 cycles: grades 1 - 6 (class teaching) and third cycle grades 7 - 9 (subject teaching). Recently significant education policy changes have been completed: Estonia’s Teacher Training Strategy for 2009–2013 was approved in 2009, while in June 2010 the new Act on Basic Schools and Upper Secondary Schools was adopted and enforced on 1 September 2010. The new national curricula for basic schools and upper secondary schools were adopted in January 2011. Education for Sustainable Development has been an important topic present in the educational debate since early 1990-ies. “Environment” became the cross-curricula topic already in 1996, soon after the adoption of the Act on Sustainable Development in 1995. SD was supplemented to the

cross-curricula topic on Environment in 2002 and is valid since then. The Ministry of Education and Research is responsible for implementing ESD topics through formal educational system, and via the national curriculum. Teaching Sustainable Development topics starts in early childhood education and for example, “Me and Environment” is one of the subject areas in the pre-school education. Interestingly, the Ministry of Education and Research is responsible for implementing Sustainable Development ideas in education, and it is also strongly supported by the Ministry of the Environment. A great number of ESD-related activities and programmes supporting the curriculum are, however, developed and co-ordinated by the Ministry of Environment and especially via the subordinate agency – the Environmental Board and the state company the State Forest Management Centre. The Environmental Investment Centre finances environmental education and awareness-raising projects applied by schools and kindergartens but also NGOs. In summary, according to the cross-curricular topic “Environment and Sustainable Development” in the National Curriculum of Basic Schools from 2011, it strives to shape the pupils into socially active, responsible and environmentally aware people who preserve and protect the environment, who value sustainability and who are ready to find solutions to the problems of the environment and of human development.

## Georgia

General education in Georgia is divided into 3 cycles: elementary (grades 1 - 6), basic (grades 7 - 9) and secondary (grades 10 - 12). Compulsory education lasts 9 years (age 6 - age 15) and covers elementary cycle (class teaching) and basic one (subject teaching). The general approach, as well as content and methods of teaching are defined by two framework documents since 2005 - National Goals of General Education and National Curriculum. Another important component of the reform that might be relevant to the context of the current research is the decentralisation of the management of general education which gives more freedom to schools. In particular schools are liberty to make decisions about teaching methods and teaching contents thus explaining a general character of their curriculum framework documents. The structure, the functional interrelationship between the elements of the system as well as the normative documents regulating the content and methods of teaching have been entirely reconstructed in response to worldwide stimuli and influences. Taking a brief glance at the framework documents may be enough to find keywords

indicating the importance of ESD in the Georgian educational system. General commitment to it is reflected in the Goals of General Education. The logic of the new national curriculum envisages cross-cutting representation of ESD-related content and emphasises importance of generic skills development. An important challenge, however, is to bring more commitment into an already built framework and to strive to achieve a general commitment towards ESD which is reflected in real-life classroom activities and the school experience of students. Therefore, it is important to consistently include ESD content in lower levels of hierarchy of the curricular documents and textbooks as well as to ensure integrity of approach across different grades, subject groups and subjects.

### Kosovo\*

The present structure of educational system contains 9 years of compulsory education (age 6 - age 15) in 2 cycles, grades 1 - 5 primary education (class teaching) and 4 years of lower secondary education (subject teaching). The main educational document that the system relies on is the Kosovo\* Curriculum Framework (KCF) which is a modern *competence based curriculum*. When examining Kosovo\*'s curriculum, it must be taken into consideration that Kosovo\* is not only a country that entered the transition later than the other countries in this study but also one that is still looking for a safe way to develop and to fulfil the needs of its people. This means the basic needs such as ensuring food, safe water supplies, and the feasibility of good health and good education for all. Efforts for development have found Kosovo\*'s situation to be that of a problematic stability, with the need to rely on donations in order to even have a chance to realise its efforts for development. All the efforts made up until now did not focus on the non-economic development but on immediate concerns and leaving out the long-term consequences. Nevertheless, Sustainable Development has become embedding a number of projects and development programs across all levels of government: local, regional and national. Alongside economic and social problems, environmental protection is one of the biggest problems Kosovo\* faces. The matter of environmental protection has never been addressed before or regulated in a systematic way.

Kosovo\*'s curriculum is structured around six learning areas that apply from pre-school up to upper secondary education, including both general and vocational education. The fourth one is Society and Environment. The KCF specifies that within the Learning Area "Society and environment", learners will develop an

awareness of themselves and others in their immediate as well as broader social contexts and environments, thus introducing at least some aspects of ESD into the curriculum documents.

## **Macedonia\*\***

Macedonian general educational system currently is divided into 2 phases - Primary education (nine years divided in 3 cycles): ages 6 to 14, and Secondary education (three / four years): ages 15 to 18/19. Compulsory education lasts 12 years (age 6 - ages 18/19). Class teaching is in the first two cycles of elementary school and first diversification happens after grade nine and before entering secondary education. A Concept for Nine-Year Primary Education in the Republic of Macedonia\*\*, adopted by the Government in 2007, introduced the new structure of the primary education and the new approach to teaching and learning process, setting the pupil's experiential learning at the centre of the educational system. It is a very general document, setting the basic principles, goals, outcomes and the general framework of the primary educational system used in Phase A of the research. While setting the general parameters of the teaching process, it provides substantial freedom to teachers in their teaching and ways to achieve the outcomes. It introduces three distinctive development periods in the primary education cycle. It also introduces Life-Based Skills Education as a compulsory subject and Environmental Education as an elective subject, both in line with the principles of Education for Sustainable Development. The Law on Primary Education was adopted in 2008 and it gives the legal framework to the Concept for Nine-Year Primary Education, and makes it operational. The Law is very prescriptive on the normative side but it follows the Concept in the general approach by prescribing the basic outlines and leaving implementing freedom to teachers and schools. It does not include principles or outcomes, only goals where some of the principles of ESD can be identified. Both documents draw from The National Programme for the Development of Education 2005-2015, adopted by the Parliament in 2006. This policy document sets the general guidelines for educational development and insists on the promotion of cultural identity in a multicultural context. One of the goals and tasks given to education in 2005-2015 is the development of the individual by requiring that students should get to know, understand and respect other cultures at national and international level. Several dominating debates continue in Macedonia\*\*; inter-ethnic integration, implementation of information

technology (IT), decentralisation, religious education. Conversely, Sustainable Development has been marginalised by both education professionals and policy makers. It has not received the necessary public attention or given the institutional push for its full incorporation in the educational system. ESD is a very important principle that needs to be integrated in the existing curriculum from a very early age and throughout compulsory schooling. However, (E)SD is not included in the major policy documents or in the legislation that regulates education. The last Framework Curriculum for Primary Education was adopted in 2007 and there is no clear evidence that SD was considered while it was being developed. There is no explicit mentioning of SD, or clear statement of Sustainable Development as a principle. However, a re-read of the principles and its aims with SD in mind, leads to an implicit underlying meaning that refers to SD. Nevertheless, it is highly encouraging that the term Sustainable Development is found repeatedly in the curricula of individual subjects, especially natural sciences, like Biology, Nature etc. Environmental Education is an elective subject that can be chosen by pupils in the 7th, 8th or 9th grades, which covers ESD from cognitive contents through skills and values to futures thinking. This is a small but very important step in the right direction, making pupils aware of the importance of acting responsibly and providing value framework that might influence their decisions on environmental issues.

## Romania

The pre-university system in Romania is organized on 3 levels of 4 years each: primary education, secondary education or gymnasium, and high school. It is mandatory to complete 10 years of education (age 6 - age 16). According to the most recent education law, 9th grade will be considered secondary school, so the 3 levels will have new dimensions: 4 - 5 - 3 years. The first two levels are the same for everyone and a new national curriculum is being adopted. In Romania, there were several attempts to reform the educational system, including the national curriculum and school programmes. Sustainable Development education was not considered until now a strategic objective of the educational reform. Sustainable Development education was not defined as a component of the curricular reform, and in public debate, including the one prior to the new Education Law, this topic was almost absent. The main reason is that other issues and topics are considered national priorities. Therefore, Education for Sustainable Development has a peripheral place in the national

curriculum, its components being mentioned only fragmentary or contextually in natural science subjects such as Biology and Geography. Hence, no transversal curricular subjects were identified and there were no initiatives to sustain the presence of Sustainable Development education in the national curriculum. Educational system can be considered precarious and we can diagnose a severe historical delay regarding the assimilation of Sustainable Development education values. Although in some lessons, topics which lend themselves to developing SD skills are being taught, the promoted mentality and the preferred type of debate are still in conflict with Sustainable Development values.

## Slovenia

General education system in Slovenia includes two levels: primary and secondary education. Compulsory (primary) education lasts 9 years (age 6 to age 15) and those are divided into 3 educational periods of three years each. The first period is classroom based and the pupils have one teacher and an assistant teacher, no numeric marks are given, only descriptive ones. The inclination to value based teaching is noticeable. The last triad has most elements of differentiation by dividing groups of pupils according to the chosen level in some subjects. The goals of education are defined by the laws and by the educational programs (subject curricula), meaning subject specific curricula (subject programs). The topics of Sustainable Development (SD) and Education for Sustainable Development (ESD) are present on various levels in the Slovene education debate. Although the debate is almost omnipresent it does not result in official documentation and practice as much as the global situation demands. The White book on education was drafted and has been in public consultation since spring 2011 and it includes most of the topics of ESD. However, the government fell in September 2011 before the document could be approved and there are several documents on ESD that are non-binding. Those include: guidelines for ESD and the cross curricular subject called Environmental Education (EE), which is defined as one of the additional, non-obligatory subjects. In Slovenia, Education for Sustainable Development is still not perceived as an integral part of formal education as such, but as an additional element, which was shown from the analysis. In text books, elements of SD were mentioned as a separate, additional part of different chapters. The trend of strengthening ESD is noticeable, but it is still in early stages.

## England (UK)

No official organisation from UK is a member of the ESdPI project, and England is not among the ENjoinED countries in the sense of those listed above. It is obvious that it is a historically and culturally different country from the sample of the East European and Caucasus regions countries. However, English curriculum and educational system have already been subject of research concerning ESD practices and content, and can provide a link to pre-existing findings and recommendations.

A study by Kerr and Cleaver of citizenship education concept includes calls for crossovers (cf. also Hicks, 2003) between citizenship education and ESD to permeate the whole curriculum and 'school ethos', rather than being added as additional 'education about' content (Kerr & Cleaver, 2004). This is similar to our calls to make ESD one of the principles of curriculum and school practice. England has also had a practice of combining ESD with mainstream education for over a decade now (Gough & Scott, 2001), with reports of varying levels of success that can be instructive for our initiative's efforts (cf. Chatzifotiou, 2002, 2006; Firth & Winter, 2007). Only Phase A (cf. Methodology) of the research described here was conducted in England, but that is the phase from which most of the data for this comparative study was drawn.

Despite its special status in the project, for comparative purposes we include information about English compulsory education system here. Education is compulsory between the ages of 5 and 16 years.

It is organised into 2 phases - primary and secondary education – and 4 key stages as follows:

- key stage 1 for pupils aged five to seven (ISCED 1) (primary)
- key stage 2 for pupils aged seven to 11 (ISCED 1) (primary)
- key stage 3 for pupils aged 11 to 14 (ISCED 2) (secondary)
- key stage 4 for pupils aged 14 to 16 (ISCED 3) (secondary).

Since the change in government in 2010, several reforms were set in motion. In 2010, the Schools White Paper was published and in 2011 a new Education Act was passed. However, the most interesting reform for our study is the National Curriculum Review. A systematic and comprehensive review of the National

Curriculum for 5 to 16-year-olds was established in January 2011, aiming to report in 2012 and be implemented in 2013 and 2014. The Review is part of the Government's commitment to give schools greater freedom over the curriculum and will set only the essential knowledge that all children should acquire. Whether ESD will be one of the principles of the new curriculum remains to be seen from available information.

## Sustainability indices

The sustainability of the nine countries that participated in the study could be characterised by the 3 most referred indices - Human Development Index (HDI), Happy Planet Index (HPI) and the Global Footprint. From its introduction in 1993, HDI had comprised three components: life expectancy, adult literacy and GDP per capita in annual prices in USD. From 2010, the index has been modified, and from now on the three components that are now being used are life expectancy, education index and income index (United Nations Development Programme [UNDP], 2011b). Whereas HDI has been used for some time, the Happy Planet Index was only introduced rather recently - first launched in July 2006. In 2009, the HPI 2.0 report was released with updated data on 143 countries worldwide (Abdallah, Thompson, Michaelson, Mark, & Steuer, 2009). While the HDI Index ranges from 0 to 1, the HPI scores range from 0 to 100. High scores of HPI are only achievable by meeting all three targets embodied in the index – high life expectancy, high life satisfaction, and a low ecological footprint. The HPI is an efficiency measure: the degree to which long and happy lives (life satisfaction and life expectancy are multiplied together to calculate happy life years) are achieved per unit of environmental impact. While both indices utilise the high life expectancy as one of the core targets, HDI addresses the economic growth coupled with literacy whereas HPI addresses people's satisfaction with life coupled with resource use efficiency and reduction of emissions (global footprint). HDI and HPI for the nine countries of the project are described in Table 3.

**Table 3.** Human Development Index (UNDP, 2011b) and Happy Planet Index (Abdallah et al., 2009) and Ecological Footprint (Global Footprint Network, 2010) of the 9 participating countries

Country	HDI 0 – 1 2010	HPI 0 – 100 2009	Ecological Footprint 2007 (global hectares)
Bosnia and Herzegovina	0,710	45,0	2,7
Croatia	0,767	47,2	3,7
Estonia	0,812	26,4	7,9
Georgia	0,698	43,6	1,8
Macedonia**	0,701	32,4	5,7
Romania	0,767	43,9	2,7
Slovenia	0,828	44,5	5,3
UK (including England)	0,849	43,3	4,9
Kosovo*	<i>Not calculated due to lack of data</i>		

For example, while UK (HDI=0,849), Slovenia (HDI=0,828) and Estonia (0,812) rank as the highest HDI among the eight countries, Estonia performs the poorest according to HPI (HPI=26,4). The reason for this is largely embedded in the large ecological footprint of Estonia (7,9 gha), that in turn is caused by the large carbon footprint (3,30gha) (Global Footprint Network, 2010). The latter in turn, is caused by fossil fuel (oil shale) based energy production. The carbon footprint is also large for Macedonia\*\* (3,94 gha) and Slovenia (3,42gha) for the same reasons – coal-fired power plants make up for over 80% (Macedonia\*\*) and over 30% (Slovenia) of the power generated in the country (enerCEE.net, retrieved Jan 2012). Although Georgia is operating within the limit, the other seven countries (no data for Kosovo\*) have an ecological footprint of over 1,8 gha, and can thus be regarded as outside the safe operating limit of planetary boundaries (Global Footprint Network, 2010). The highest HPI score is that of Costa Rica (76,1 out of 100). Costa Rica reports the highest life satisfaction in the world (8,5 on the scale of 0-10) and Costa Ricans have a high average life expectancy (78,5 years): all of this with an ecological footprint of 2,3 global hectares (Abdallah et al., 2009).

It is well recognised that the indices are not perfect. It is a challenging task to measure the complex concept of sustainable well-being. In attempting to do so

it is inevitable that it does not answer every question. There is more to health than just life expectancy – one can live a long time, but bed-ridden. There is more to a country's resource consumption than its ecological footprint as footprint does not directly take into account the use of non-renewable resources, or the degradation of soil, loss of biodiversity or emission of pollutants. And there is more to an individual's well-being than their response to a single question on whether they are satisfied with their life – some parts of their life may be going well, others less so (NEF 2009).

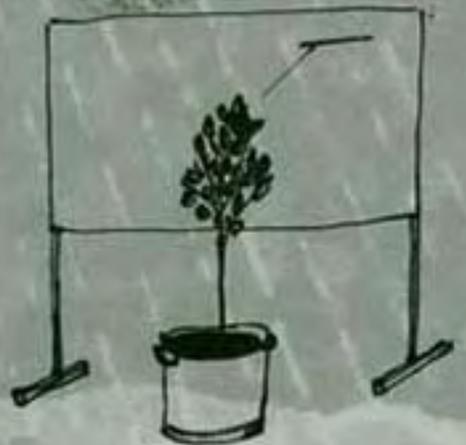
However, all those indices attempt to guide societies towards lower carbon and higher well-being lifestyles. And every country has a choice on how to manage the trade-off between well-being and resource consumption.

This brief introduction to the countries in our research and their educational systems should help the reader understand the context in which this study has been conducted and against which the results should be interpreted.

**We can say that none of those countries have fully accepted ESD as an important part of the school curriculum or as a basic educational principle** and moreover, most of them are highly or very highly developed from UN global perspective (UNDP, 2011b), while some see Sustainable Development as something only the very highly developed world should be concerned with.

# Chapter 4

*Methodology*





## 4. Methodology

### The research tools

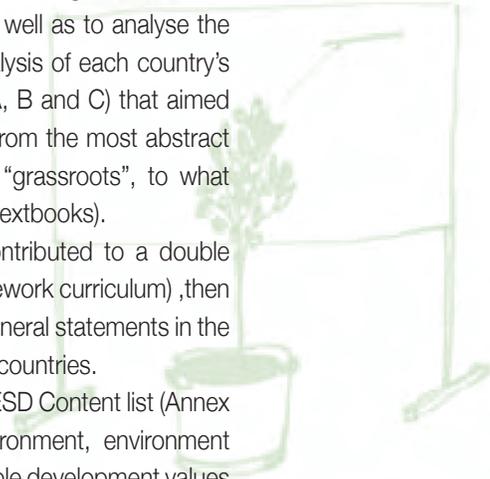
The aim of the research was to identify, collect and systematically present the existing content most relevant to Sustainable Development in the national curricula of the participating countries. The research methodology was designed by the project's Central Research Team (CRT) to be as straightforward and efficient as possible for the country teams to gather, as well as to analyse the diverse dataset, and to aid the CRT in comparative analysis of each country's findings. The method involved three separate phases (A, B and C) that aimed to restrain and circumscribe the scope of the research from the most abstract educational documents (framework curriculum) to the "grassroots", to what exactly is delivered to the children in the classroom (the textbooks).

The hourglass-shape of this research methodology contributed to a double analysis, starting from a more general point of view (framework curriculum), then moving to a particular context (textbooks), ending with general statements in the comparative report derived from findings from individual countries.

All three phases used a Coding Matrix, consisting of the ESD Content list (Annex 1), and content Categories list (humanity affects environment, environment affects humanity, individuals affect environment, sustainable development values and, other). The coding matrix was a central part of the specially designed research matrices for each phase of the research, which provided a unified way of recording the findings in each country.

**ESD Content list** - there are two major groups of SD content elements that make up the content list: *Cognitive Content and Skills and Values*. The **Cognitive Content** was organised in three segments: *socio-cultural elements* (human rights, peace and human security, gender equality, etc.), *environmental elements* (natural resources, water, soil, air, energy, etc.), *economic elements* (poverty, planetary boundaries, market economy, corporate and social responsibility and accountability, etc.), corresponding to three major components of the concept of Sustainable Development (SD). The **Skills and Values** group contains items like: acting with responsibility locally and globally, acting with respect to others, critical reflective thinking, applying learning in a variety of life-wide contents, etc. (21 items in total). After the analysis of findings, the Skills and Values group was divided into **five major groups**, conceptually close and with

Despite the many reports on ESD prompted by the Decade, its precise meaning continues to be the subject of worldwide debate. (Wals, 2009, p. 25)



a tendency to cluster together in educational documents: *Values of respect and responsibility, Reflexivity and complexity understanding, Change observation and management, Community cooperation, Basic science skills.*

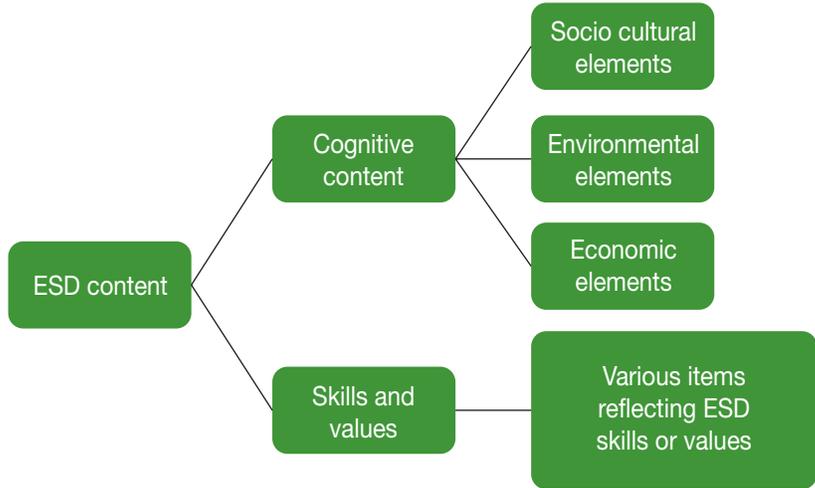


Figure 8. Conceptual organisation of the coding matrix elements

All elements of the content lists had **codes** assigned (A1, A2, etc. for socio-cultural content, B1, B2, etc. for environmental elements, SV1, SV2, etc. for skills and values content) and **descriptions** that added coherence and unity to the analysis process in all participating countries, while at the same time permitted a quantitative approach along with the qualitative one.

## How the research tools were designed

When choosing the elements for the coding matrix, the CRT faced two discouraging tasks. On the one hand there was the lack of a universally defined global ESD curriculum, whilst on the other hand, there the lack of an operational definition of Sustainable Development (SD) that educational process should provide for. If a global ESD curriculum existed we would have been able to compare it with the existing national framework, pointing out the areas in need of alignment. On the other hand, had there been a more operational definition of SD and a more concrete description of global worldviews and actions than the current general provision, we could have attempted to design curricular steps that would help educate current and future generations towards achieving that goal.

However, the UNESCO Decade of ESD provided a mid-term report on global progress of the initiative (Wals, 2009). The report, whilst lacking a universal global ESD curriculum, attempted to provide a description of the existing content taught with the aim of educating for Sustainable Development around the world. In the report, a lot of attention was dedicated to the relationship between environmental protection elements of the curricula and the socio-cultural and economic elements. It was this division, as well as the suggestions of the appropriate topics for each of the groups, that we based our segments of cognitive content on. We decided to codify it as cognitive content since another important aspect of the mid-term report (Wals, 2009) stressed the processes, skills and value aspects of ESD. It was not only to be education about something, but also education to see and do things in the desired (i.e. sustainability oriented) way. Thus, we divided the coding matrix in to Cognitive Content (CC) and Skills and Values (SV) segments.

The Cognitive Content segment was further subdivided into Socio-cultural (A), Environmental (B) and Economic (C) elements. The DESD mid-term report's listing of the common elements attributed to ESD was modified and supplemented by the CRT's estimations of relevance of particular content to the educational systems in the region in which the research was conducted. We are aware that this selection is provisional and unbounded, that there are many elements that should have been included, and that some were perhaps given undue emphasis despite attempts to contextualize the selection. There are also more holistic perspectives on ESD education which depart from the basic

environment-society-economy conception of SD. But all of those were open to further academic criticism, and potentially too complex for our educational audiences.

The Social Cultural elements (cf. Annex 1, A1-6) are concerned with human rights, peace, and equality between individuals and social groups of various types. The latter is mostly notable and relevant in our region today in terms of gender and cultural groups. References to health (physical and mental, ageing issues, environmental health) are also included. Finally, this group of elements of Cognitive Content of the coding matrix also includes references to 'new forms of governance'. This may be the hardest element to match to any content of the compulsory education, but is an important aspect of the contemporary societies worldwide and potentially one social aspect of global shift toward a sustainable path. We were interested in mapping out to what extent, if any, compulsory educational systems provide information about the forms of governance other than the traditional Western democratic government and about alternative ways of managing the common goods and communities the students are or will be members of.

The Environmental elements (cf. Annex 1, B1-14) formed the largest segment of the Cognitive Content list and included most of the usual suspects. The relative size of this segment reflected both our belief in the importance of understanding the material foundation of Sustainable Development and the existing tradition in the regional educational systems of including environmental protection topics into formal education. We considered it important to thoroughly map out the existing aspects of ESD in the formal education curricula, and to investigate their framing and relationship to other components of ESD that may be considered novel and need to be included in the future. For that reason our Environmental elements segment contains a logical excess of elements (such as 'natural resources' and separate references to 'air', 'water' and 'soil') so as to try to capture the multiple ways in which the environment-related concepts appear throughout formal schooling. Besides further elements dealing with pollution and environmental protection, we included explicit references to Climate Change (as an important contemporary phenomenon closely related to public calls for a shift to sustainability), but also Rural development and Urbanisation, as important sustainability-related trends affecting our region.

The Economic elements (cf. Annex 1, C1-6) segment includes references to 'production and consumption' and 'market economy' as a model of economic

organisation, as well as ‘poverty’ and ‘planetary boundaries’. The aim was not to promote any particular economic model but to map out (and document the framing of) the curricular references to key concepts in contemporary unsustainable models of development. References to ‘sustainability’ and ‘social responsibility and accountability’ are also explicitly included in this mapping.

The Skills and Values Content (cf. Annex 1, SV1-21) of the coding matrix was based on the findings of the mid-term DESD report (Wals, 2009) in a similar way to the Cognitive Content. However, it was more difficult to assign concept groups to general statements of skills and values for sustainability, than was the case with the more clearly structured concepts in the Cognitive Content. On top of that, we have chosen to expand and supplement the inclusion of Basic Science Process Skills into 6 constituent elements (cf. Annex 1, SV 15-20) and manipulation of mathematical ratios (SV 21). The latter was considered important due to strong presence of mathematical quantities and ratios in the public discourse on climate change, sustainable economics and development. As mathematical ratios are a representation of relationships which indicate dependency, this was also closely connected with the complexity and systemic thinking and interrelations across disciplines. We nonetheless expected it to be more closely tied with natural science teaching in the curricular documents and have chosen to leave it with the Basic Science Process Skills.

## Division of Skills and Values Content into segments

Following the application of the coding matrix to curricular documents, a further coarse-grained grouping of the Skills and Values Content emerged, and will be applied in the analysis below. This grouping is by no means as clear cut as the division of Cognitive Content into economic, socio-cultural and environmental segments, but is nonetheless more robust across national curricular documents. As such, it corresponds more closely with the coarse-grained Skills and Values description as reported in the DESD mid-term report (Wals, 2009). Globally, two SD focal areas emerge: (a) *a focus on understanding the causes and impacts of key issues and their mutual interconnections*, and (b) *focus on capacity development for addressing the key issues at individual, communal and global level* (Wals, 2009); and these are reflected in the Skills and Values groups mapped. We thus, for data interpretation, reorganise the 21 element SV list into the following groups.

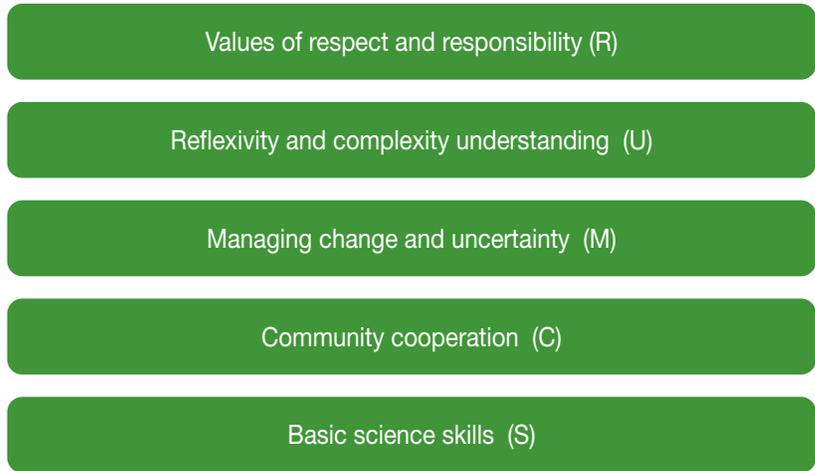


Figure 9. Five conceptual groups of Skills and Values (SV1-21)

1. *Values of respect and responsibility* (cf. Annex 1: SV1-2): this group collects only explicit value codes, and is the smallest of all the groups. Its elements, however, appear a lot in the curricula due to the broadness of the value concepts included and its general focus on responsibility as important component of sustainability thinking. Local and global value visions are also included in these codes.

2. *Reflexivity and complexity understanding* (cf. Annex 1: SV3-4, 7-8): this group includes the skills of complexity understanding and systemic approach to problems. Given the schooling context, it also includes explicit calls for interdisciplinary understanding. In order to assist the application of such rich school content to everyday life, where it makes real impact on sustainability thinking, this group also includes calls for transference skills of school knowledge to everyday situations, though the latter is one of the more general skills that would easily be at home in other skills groups too.

3. *Managing change and uncertainty* (cf. Annex 1: SV 5-6, 9-10): this group is concerned with decision-making and change management as required to transition to Sustainable Development as well as mitigation of the adverse effects of global environmental change. It includes reasoning about future events based on the patterns in past and present, as well as training for dealing with crises and risks.

4. *Community cooperation* (cf. Annex 1: SV 11-14): this group covers the skills required for group cooperation and understanding of the positions and interests of others in the group. Identification of stakeholders and their interests is a broader transversal skill to be applied in the other domains as well.

5. *Basic science skills* (cf. Annex 1: SV 15-21): as mentioned above, this group consists of the basic science process skills (observing, measuring, inferring, classifying, predicting and communicating) coupled with the manipulation of mathematical ratios.

## Human/Environment Interaction

As an additional layer of analysis, we expect ESD to be not only about content, but also about how content is presented. Building on from the methodological and historical foundation of ESD in the curricular environmental education, we sought to map out how curricular content presents the interaction between humanity, individuals and their bio-physical environment. Thus, we have set up a further segment of the Coding Matrix: the Category section. The categories were assigned by the researchers as evaluations of the curricular content framing recorded in the Research Tool workbook. This was of particular importance for environmental Cognitive Content findings.

The categories selection and definition is based on the analysis of geoscience education in the US by Kastens and Turrin (2006).

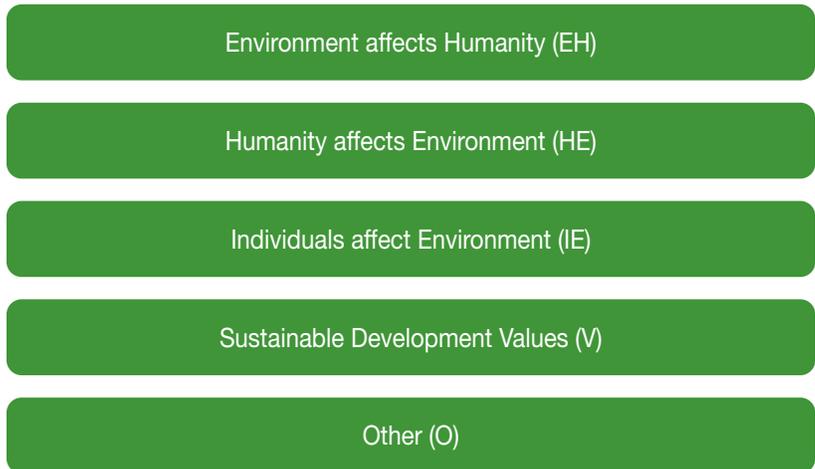


Figure 10. Five categories of curricular content framing

- **EH - Environment affects Humanity** – content that states or implies that some aspects of a natural system affects or impacts people or that humanity is dependent on some aspects of environment
- **HE - Humanity affects Environment** – content that states or implies that the actions or decisions of society influence or change the environment for better or worse

- **IE - Individuals affect Environment** – content that states or implies that the actions or decisions of individuals influence or change the environment for better or worse
- **V - SD values** – content that provides value framework that might influence students' decisions on sustainability issues
- **O - Other** – any content referring to SD that does not fall into other specific categories.

The five categories aim to show if the curricula have any orientation, an ESD vision or other.

The IE category is especially important for its broader meaning, as promoted in the mid-term report on DESD (Wals, 2009), in combination with the development of certain skills and values. The Kastens and Turrin (2006) categories were supplemented with the SD values category (V) (i.e. not referring to interaction of humans and environment) and the Other category (O). The latter is intended to cover any content not classified as interaction between humanity, individuals and their environment, or as values of Sustainable Development. In all three phases of research (Phases A, B and C) the category codes were assigned to the curricular elements selected, and part of the selection process between the phases was based on these assignments. The findings framing is particularly important in Phase C, where textbooks are analysed, as those are most closely related to the actual teaching. In recording the tasks assigned to SD content in textbooks, framing of tasks set for students was further differentiated as either 'rote learning' task (R) or 'process' task (P).

## The research process

As indicated above, the whole curricular research had three phases. Every phase had a **research tool**, an Excel workbook specifically designed by CRT for country teams to record their findings in a unique format. All country teams except for England completed all three research phases. England was participating only in the Phase A.

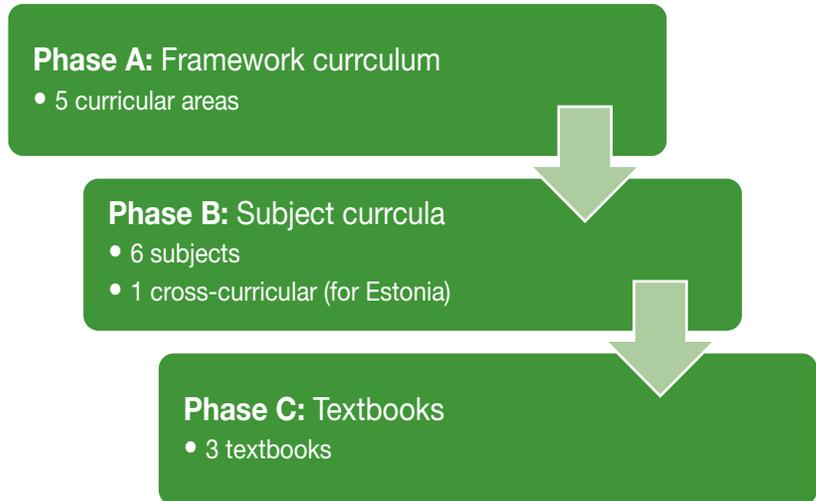


Figure 11. Research phases in each participating country

**Phase A** of the research aims to scan in each country the framework curriculum (or equivalent) to reveal the SD content and its distribution in 6 curricular areas, by going through the document(s) and recording in the matrix all occurrences of ESD content according to the Coding Matrix, as well as categorising it according to the Categories.

For each country (with minor modifications for Croatia and Georgia) curricular areas were reorganised (for coherence across countries) as follows:

Area A – natural sciences, physical environment and technology

Area B – social sciences, socio-economic development, history and economics

Area C – values and ethics education, citizenship education, religious education and philosophy

Area D – arts, humanities and languages (communication)

Area E – mathematics

Area F – physical and health education

**Phase B** of the research analysed the subject curricula. In order to focus the research, the two curricular areas with the most content found during Phase A were selected: one according to Cognitive Content and one according to Skills and Values Content. Once the curriculum areas were selected, country researchers in consultation with CRT, selected subjects - again by criteria of SD - loaded at certain grade levels (maximum of 6 subjects) for deeper analysis. In Estonia, Environment and Sustainable Development, a cross curricular theme spanning all subjects was analysed in Phase B as an extra subject.

The steps from Phase A were then repeated on the selected subject curricula, the SD content from the Coding Matrix was recorded into predesigned matrixes and categorised.

**Phase C** of the research analysed textbooks and it was conducted in two steps. Step 1 of this phase aimed to select the three textbooks from which content were to be analysed. This was based on Phase B of the research and includes the following criteria:

1. The most content loaded 'subject + grade' combination. This was based on the highest number of content elements and skills and values elements.
2. The most 'IE alone' loaded 'subject + grade' combination. This was based on the highest number of category IE (individual affects environment).
3. The most 'IE alone or with other categories' loaded 'subject + grade' combination. This was based on the highest number of IE (individuals affects environment) codes in combination with other category (except the O-other).

The rationale behind this selection procedure was to increase the focus on the content framing, as denoted by the Categories. In selecting the IE content we were hoping to find best practice examples of teaching SD with the focus on individual responsibility (cf. previous section). The primary drive behind

the selection of textbooks was not to perform an evaluation of such a limited sample, but to provide internationally comparable examples of good practice in interweaving different aspects of Education for Sustainable Development into a coherent narrative delivered to students. Also, relationship between the curricular proscriptions (indicated both in the framework curricula and the specific subject curricula) and the content, tasks and illustrations directly presented to students was to be mapped out.

The second step of phase C had a matrix which asked the researcher to analyse content, illustrations and tasks from each textbook selected. For this task, country teams relied on the findings from Phase B in order to analyse the textbooks. Therefore, in the textbooks they **searched for** and **described** content elements that they have found in the subject analysis. Although they still used the same Coding Matrix that they used in Phase A and Phase B, in Phase C of this research this list was shorter, since they searched only for content they have already identified as suggested for that subject in phase B.

## Research limitations

### Conceptual aspects

We were aware from working experience in the South East European (SEE) region that ESD is as yet seldom considered in formal schooling, and when it is, it is often equated with environmental protection education. In the interest of communication and implementation of the results of the research, it was therefore important to develop simple, familiar (rather than academically novel) concepts and methodology. It is worth reminding the reader that the aim of the research was not to compare the existing national educational documents to the ideal universal and global ESD curriculum, both in terms of content and of pedagogy, but to draw attention to some elements that an ESD-oriented curriculum might ideally contain. The researchers are aware that the Coding Matrix, which played such a pivotal role in the three stages of the research, may be said to play a role of a proto-curriculum for ESD, at least in the region our research was conducted in. In sheer terms of size and detail a 41-item list should not be compared to framework or subject curricular documents, and there should be no danger that a content-list alone supplements or replaces curricula. The national and comparative findings instead provide a good starting point for considering which Sustainable Development aspects should be included in the compulsory formal education.

## Process aspects

Attention should be drawn to some limitations of the present research, which are inherent to social empirical studies. This is an international initiative, deployed in nine countries with different linguistic, cultural, historical and social contexts. Each country had a team formed by an 'educational partner' and an 'environmental partner'. However, the research was, in most cases, conducted by the educational partner who often had little to no ESD knowledge prior to the commencement of the project. Due to the extent of the task and the time limitations enforced by the project, often more than one person worked at the different Areas or Phases of the project. Therefore a degree of subjectivity in analysing the curriculum is present, due to many researchers involved. The Central Research Team had anticipated this and it is the reason for introducing codes. However, it is still not possible to assure that all coding was entirely done in a uniform and standardised manner by all people involved. The Central Research Team tried to keep subjectivity at a minimum by describing accurately all SD elements and discussing in depth with country teams every aspect of the tasks. Linguistics was a major limitation for the CRT as all findings were recorded in the language of the document. We were lucky that several countries have the documents in English (Kosovo\*, Macedonia\*\* & Estonia) plus the CRT covered other four languages themselves. Still, in the qualitative findings we occasionally had to rely on Google Translate which creates an obvious limitation. Of course, CRT consulted with country researchers when translations were dubious or made little sense. Finally, the educational systems of the countries vary to a large extent (years of compulsory education, structure of the compulsory education, etc.) and there is a great variety of curriculum documents in the countries. These limitations need to be considered when reading and interpreting the data.



# Chapter 5

*Comparative Research Findings*





## 5. Comparative Research Findings

Many of the findings presented here take a simple quantitative form of relative amounts of this- or that- coded content, mainly from the framework curricula documents in countries included in the research. But as often as possible, we try to give examples of actual curricular lines, sentences or paragraphs that exemplify curricular content related to education for sustainable development. These are, however extractions from larger textual documents that are seldom prepared in straightforward narrative form (there are e.g. bullet listings of knowledge topics, or imperative recommendations for behaviour) and have many publicly available iterations (school copies, ministry documents, online content etc.). On top of that, examples included in this book are often unofficial translations of the original texts in national languages done for the sole purpose of inclusion in this book or the National Reports preceding it. For that reason they are not cited here in the same manner as other published sources (e.g. UNESCO reports or research articles), but simply by the country and the function they perform in the educational system (framework curriculum, mathematics subject curriculum etc.). Direct transliterations from curricular documents when used as examples are often given in italics without quotation marks, or are listed in separate boxes.

### 5.1. Knowledge about environment, society and economy

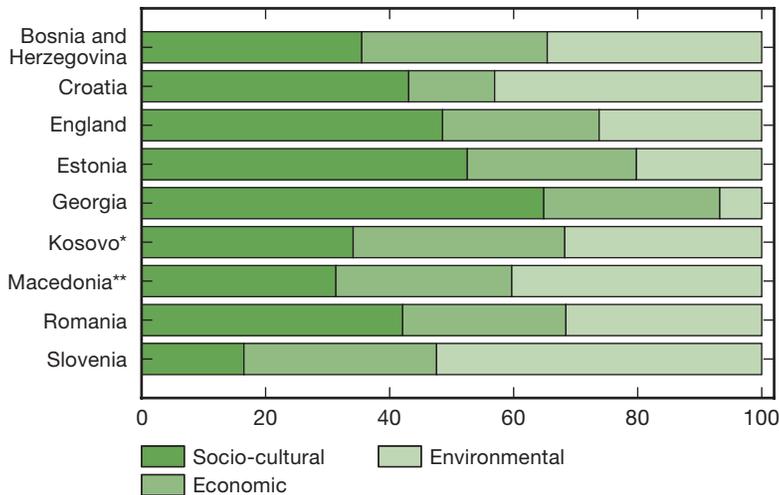
In the absence of an ideal compulsory ESD curriculum, applicable universally to different countries and cultures, the quantitative relations between socio-cultural, environmental and economic segments of the ESD-cognitive content must not be taken as the ultimate ESD curricular design. Furthermore, as our coding matrix contained an unequal number of elements in the three categories, this may have influenced the researchers' choice of content to be included (a greater variety of content offers easier recognition of curricular content as ESD-significant). Some of this worry can be dispelled by relying on examples of **Georgia**, **Estonia** and **England** where environmental elements come underrepresented despite taking the lion's share of the coding matrix and relying on a strong tradition of environmental education in some of those countries. Nonetheless, despite seeking a balance between socio-cultural, environmental and economic cognitive content, we do not suggest that a perfect balance of

"...to recognize that preserving the environment is beneficial to our society"  
(Kosovo\* curriculum)

'thirds' completes the job of making the cognitive content of the framework curriculum ESD-friendly. We also wish to point out that an excessive misbalance of the ESD-related content is a potential for the development and improvement of the cognitive content which is relevant to Sustainable Development. In other words, despite ideal 'thirds' not being advocated, a curriculum that almost exclusively contains economy-related elements with next to no environmental and socio-cultural ones is probably in need of redressing in order to serve as ESD-friendly curriculum for compulsory general education. Also, there is a need for a deeper qualitative analysis of the content's presentation and framing. Hence, this section serves as an overview and starting point for further discussion.

Be that as it may, if people differentiate between sustainability and unsustainability and if primary schooling should lay the foundations for a later appropriation of more domain-specific factual knowledge, then most of our curricula are on track. Overall, Social and Cultural elements of ESD cognitive content (as selected for the Coding Matrix) are the most represented content. Together with Values of respect and responsibility (also the most represented) this sets a firm foundation for shaping populations ready to cooperate for sustainability. However, compulsory education curricula have in the past often strived for world peace and solidarity, and both remain out of grasp. In the case of our countries, **Georgia, Estonia and England** could probably increase the representation of the elements from the other two groups without expanding the overall curriculum. In **Georgia**, this is most urgently needed for environmental cognitive content. **Slovenia**, on the other hand could benefit from a relative increase in socio-cultural content. Interestingly, in almost all our countries Gender equality is amongst the least represented socio-cultural cognitive content, despite most of them experiencing a combination of traditional gender inequality and historical strife to address it.

## Most of existing ESD-knowledge is about social and cultural aspects of SD



**Figure 12.** Relative representation of different groups of Cognitive Content in the framework curricula (Phase A) of each of the participating countries

Given the frequent view that ESD is based on Environmental Education (EE), our own detailed list of environmental elements, and an impressive history of EE in some of our countries we expected to find a greater overall representation of environmental elements. This was indeed the case in **Croatia, Slovenia and Macedonia\*\***. In all other countries environmental elements' representation falls below 1/3 of ESD-relevant content, below that of socio-cultural content. In **Georgia** it is strongly underrepresented, at less than 10% of overall ESD content. This might be a surprising result in the cases of **England and Estonia** due to strong history of EE in both those countries. Again, given the importance of food production for sustainability, overall *Agriculture and Rural development* are among the least represented elements in almost all countries (with perhaps the exception of **Macedonia\*\***).

Given their conceptual complexity economic elements were expected to be among the least represented ESD cognitive content in primary schooling. This did indeed turn out to be the case in **Croatia**, but in all other countries economic elements are as represented or more represented than environmental ones. At this level this is a surprise and a positive finding, inviting a closer look at the distribution of the individual elements within the group as well as their framing in the curricular documents. It is interesting though, that overall, among the least

represented of them are the *corporate social responsibility and accountability*, and Market economy. Overall, the content related to ESD economic elements largely focuses on explicit invocation of *Sustainable Development*, followed to a much lesser extent by presentation of different modes of material *Production and/or consumption*. This quantitative overview would suggest that within economic elements, education about sustainability-issues of the current modes of production and economic organisation could take some of the place currently assigned to (laudable) calls for Sustainable Development.

## Selected environmental elements

### Bosnia and Herzegovina

agriculture • air • **biodiversity** • climate change • energy • human beings • natural disasters

**natural resources** • pollution • rural development • soil • urbanisation • waste • water

### Croatia

agriculture • air • **biodiversity** • climate change • energy • human beings • natural disasters

**natural resources** • pollution • soil • waste • water

### England

agriculture • **biodiversity** • climate change • energy • human beings

**natural resources** • pollution • rural development • urbanisation • waste

### Estonia

**biodiversity** • climate change • **human beings** • natural disasters

**natural resources** • pollution • rural development • urbanisation • waste

### Georgia

**biodiversity** • climate change • **human beings**

**natural resources** • pollution

### Kosovo\*

**biodiversity** • climate change • **human beings**

**natural resources** • pollution • urbanisation • water

### Macedonia\*\*

air • **biodiversity** • climate change • energy • **human beings** • natural disasters • water

**natural resources** • pollution • rural development • soil • urbanisation • waste

### Romania

air • **biodiversity** • climate change • energy • natural disasters

**natural resources** • soil • water

### Slovenia

agriculture • air • **biodiversity** • climate change • energy • **human beings**

**natural resources** • pollution • rural development • soil • urbanisation • waste • water

Figure 13. Clouds of relative proportions of environmental elements in framework curricula (Phase A) across countries. The figure includes only those elements that are represented in curricula in respective countries.

The figure above illustrates the presence or absence, of all environmental elements across countries. Perhaps the most interesting finding is that even after a decade and more of introducing EE to schools, pollution and waste are still not very much reflected in the curriculum of the examined countries while most surprising finding is that **Kosovo\***, which is struggling with pollution and general environment protection, has very little of such content in its compulsory education. Perhaps even more striking are the findings in **Estonian** curriculum which actually has a cross-curricular area of Environmental education, yet still does not have overrepresentation of the expected elements. And when cross-curricular themes are not a topic of any subject, there is the worry that **what gets to the students is even less than what the documents prescribe.**

The curricula across countries when talking about environment seem to be mostly concerned with Natural resources and biodiversity. Even though the environmental content overall cannot be said to be underrepresented in schools, it seems to be **lacking the vision and rationale behind teaching these topics to the children.** This again gives ESD a window of opportunity to be inserted into the educational systems as they are, as with a clear perspective all of these topics could become more ESD- oriented.

As seen on Figure 13, the topics of urbanisation, rural development or agriculture are also rather underrepresented and therefore discussed further below.

## Urbanisation, rural development and agriculture

B6	Agriculture	Role of agriculture (food, employment); position of agriculture within a wider economics system; forms of agriculture (industrial, small scale, organic, sustainable etc.)
B9	Rural development	Villages, communities - role, age ratio, employment; position within wider society, economic base
B10	Urbanisation (urban footprint; urban sprawl)	Cities/towns - size, population, dynamics, city planning, including transport planning; impact on the landscape and wider environment; quality of life

Around 75% of Europe's population have chosen urban areas as their place to live. Urbanisation impacts go, however, far beyond city borders. Europe as a whole has adopted urban lifestyles and uses cities' amenities like cultural, educational or health services. While cities are the motors of Europe's economy and creators of European wealth, they depend heavily on resources from outside regions to meet their demand of energy, water, food and to accommodate waste and emissions. (European Environmental Agency [EEA], 2011b). Expansion of cities outside of their initial boundaries (urban sprawl) has increased pressures on landscapes and agricultural land and also increased the demand for transportation between suburban and urban areas, which in turn has increased the level of air emissions.

According to EEA, farmers represent only 4.7% of the European Union's (EU's) working population, yet manage nearly half of the EU's land area. Farming has a big influence on Europe's landscapes and the quality of its environment. With farmers managing almost half of the EU's land area, the agricultural sector is a major source of pressure on Europe's environment. Over the past five decades, the EU Common Agricultural Policy (CAP— has encouraged the sector to rapidly modernise and to intensify the agricultural production; and as such, CAP has the helped the growing globalisation of the world's economy. As a result, the agricultural sector is responsible for a large share of the pollution of surface waters and seas by nutrients, for loss of biodiversity, and for pesticide residues in groundwater. Greening the CAP has brought about some improvements, but more is needed to balance agricultural production, rural development, and the environment (EEA, 2011a). Organic farming is a farming system that has been explicitly developed to be environmentally sustainable, and is governed by clear,

verifiable rules. It relies on a number of objectives and principles, as well as common practices designed to minimise the human impact on the environment, while ensuring the agricultural system operates as naturally as possible. Thus organic farming appears suitable for identifying environment-friendly farming practices. The increase of 7.4% in the total area under organic farming between 2007 and 2008 (as compared with 5.9% between 2006 and 2007) illustrates the continuing positive trend in the organic sector in the EU-27. In 2007, the area under organic farming accounted for 4.1% of the Total Utilised Agricultural Area (UAA) in EU-27 (organic agriculture covers 7.8 million hectare in EU-27 thereof 1.5 million hectare in EU-12) (EEA, 2011a).

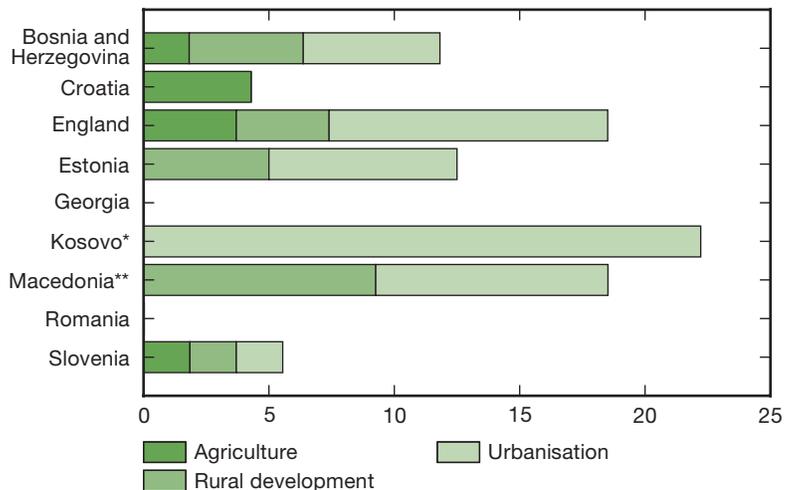


Figure 14. Relative proportions of selected economic elements in framework curricula across countries in %

Giving the importance and diversity of human settlements, both urban and rural, it is expected that national curricula address these issues from different angles and time perspectives. The analysis of the national curricula revealed that the issues of agriculture were only occasionally mentioned in the national curricula: 3 countries out of 9 countries had agriculture mentioned in the national curriculum. Looking at the actual number of entries (cf. Annex 2) it can be seen that countries that explicitly mention agricultural issues are **Croatia, Bosnia and Herzegovina, Slovenia** and **England** and as seen on Figure 12 all below 5% of all environmental elements. According to the analysis, other countries

had not included agriculture at all in the national curriculum frameworks. Rural development issues were mentioned in only 4 national curricula out of 9; in all countries the presence was under 5% of all environmental elements except in **Macedonia\*\* where it was under 10%**. *Urbanisation issues* were slightly better represented especially in **Kosovo\*** and **England**. Strikingly, urbanisation was never mentioned in the national curricula of **Romania** and **Georgia**.

## Human/Environment Interaction

In an effort to map out how curricular content presents the interaction between individuals, humanity and their bio-physical environment, an extra layer of analysis was introduced especially concerning the mapping of the environmental elements. The idea behind it was to analyse the framing of this content. Using the Kastens and Turrin (2006) model, the researchers coded the environmental content to be about Individuals affecting Environment (IE), Environment affecting Humanity (EH), Humanity affecting Environment (HE) or about SD values. Unfortunately the data sets for **Bosnia and Herzegovina** and **Kosovo\*** are not available for this particular analysis.

**Table 4.** Humanity-Environment Interaction framing in percentages (Phase A), HE: humanity affects environment, IE: individuals affect environment, EH: environment affects humanity, SDV: sustainable development values

Country	HE %	IE %	EH%	SDV %	Other %
Croatia	14	6	9	40	31
England	20	9	14	21	36
Estonia	15	28	4	31	22
Georgia	29	8	29	30	5
Macedonia**	17	22	20	35	6
Romania	10	9	15	24	42
Slovenia	28	27	17	25	3

**Analysing the findings from the point of view that any ESD curriculum should teach children about individual responsibility as well as possibilities of individuals to remedy situation, i.e. the students themselves by making changes in their lifestyles the findings were not encouraging.** In cases when the content regards Human/Environment interactions, in **Croatia** and **England** for example is the focus in on Humanity as a whole affecting environment, while in **Romania** the focus in on Environment effecting Humanity. **Georgia**, on the other hand, seems to understand the importance of it (more than 70% of the content focus on Human/Environment interaction), but is not concerned with individual responsibilities; **Slovenia** again is concerned with it with a large proportion of content focusing on Human/ Environment interaction but over 26% of the content focuses on individual responsibility. **Macedonia\*\*** has a more balanced approach and is

equally concerned with Individuals affecting Environment, Humanity affecting Environment and Environment affecting Humanity.

In **Estonia**, although less than 50% of the content describes Human/Environment interaction, the existing content has a clear focus on individuals affecting environment (IE). Of the data analysed this is where **Estonia** stands out and it is a rather significant finding taking into consideration **the importance of framing of the content**.

### Some examples of Individual Environment interactios content:

*...move around the natural environment safely, without destroying natural resources or hurting themselves. (Estonia, Natural Science Grades 1 - 3)*

*..have a responsible attitude towards the living environment, valuing the principles of sustainable development, notice, analyse and assess the effects of human activity and assess and calculate the danger of the materials used in human activities...(Estonia, Chemistry grades 7 - 9)*

*...they analyse consumer behaviour and value consumers who act in an environmentally friendly manner and know their rights and obligations... (Estonia, Technology grades 4 - 6)*

*...my role in preserving nature, respect for animate and inanimate nature, helping those in need, pets and being responsible for them, uniqueness of seasons, etc... (Estonia, Literature grade 4)*

*What should I do to restore clean water?  
(Slovenia, Nature & Technology, grade 5)*

*... lead students to think about different, intended and unintended, repairable and irreparable consequences of human interference in ecosystems and encourages them to seek natural solutions to the problems identified... (Slovenia, Biology, grades 8-9)*

*... promoting healthy lifestyle and education for taking responsibility for protection of environment ... (Macedonia\*\*, Nature grade 4)*

The authors are aware of the need to further analyse the Human/Environment interactions as it deserves a much closer consideration through all phases on the research and especially in the textbooks as it may reveal more important lessons for further development of ESD.

## Selected economic elements

### Bosnia and Herzegovina

corporate responsibility • market economy • planetary boundaries

poverty • production/consumption • **sustainable development**

### Croatia

market economy • planetary boundaries

poverty • **production/consumption** • sustainable development

### England

corporate responsibility • market economy • planetary boundaries

poverty • **production/consumption** • sustainable development

### Estonia

market economy • planetary boundaries

poverty • production/consumption • **sustainable development**

### Georgia

**corporate responsibility** • market economy • planetary boundaries

poverty • **production/consumption** • **sustainable development**

### Kosovo\*

corporate responsibility • planetary boundaries

poverty • production/consumption • **sustainable development**

### Macedonia\*\*

**corporate responsibility** • market economy • planetary boundaries

poverty • **production/consumption** • **sustainable development**

### Romania

**market economy** • planetary boundaries

poverty • production/consumption

### Slovenia

corporate responsibility • market economy • planetary boundaries

production/consumption • **sustainable development**

Figure 15. Clouds of relative proportions of economic elements in framework curricula (Phase A) across countries. The figure includes only those elements that are represented in curricula in respective countries.

The figure to the left shows the presence of economic elements in the Framework curriculum documents across the countries. Noticeably, *sustainable development* appears as the most frequent element in most countries, while *market economy* and *corporate social responsibility* as the least present. This is an encouraging finding and one that needs to be explored further if we are to have curricula with a vision about ESD. It should be noticed, however, that Romania does not have any mention of sustainability or Sustainable Development in its Framework curriculum document. Slovenia and Estonia, on the other hand, have no mention of poverty as a topic in framework curricula, despite being among the most developed countries in the sample.

“... learn about actions organizations can take to influence communities and the environment” (England curriculum)

### Market economy and Corporate social responsibility and accountability are not topics in primary compulsory schooling

C3	Corporate social responsibility and accountability	Companies work out and implement certain plans on responsible resource use, a positive impact through its activities on the environment, consumers, employees, communities, stakeholders and all other members of the public sphere.
C4	Market economy	An economic model; its role in today's global society

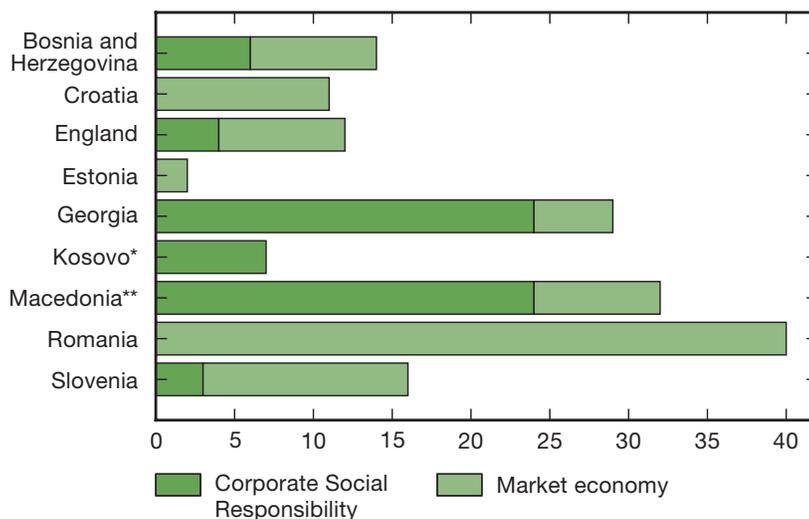


Figure 16. Relative representation (%) of Market economy (C4) and Corporate social responsibility and accountability (C3) elements within economic cognitive content in framework curricula (Phase A) across countries

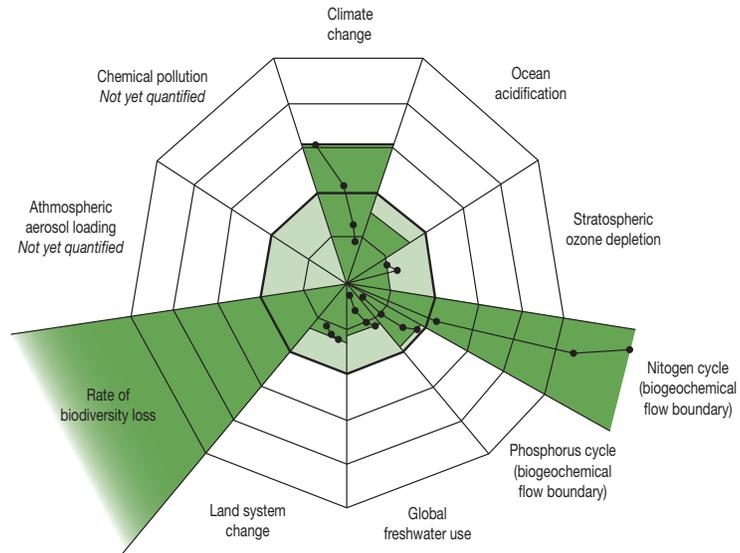
The content coded as *Corporate social responsibility and accountability* (CSR; C3) or *Market economy* (C4) is the least overall represented of all economic elements of Cognitive content in the 9 countries' framework curricula. In some of the countries *Market economy* code is often interchangeable with general references to economics, effectively bringing this count even further down. The situation in individual countries usually reflects this, except for the cases of **Macedonia\*\***, **Georgia** and **Romania**. The overall representation of this content is so low that no further statistically significant information about it can be given. In fact, no national framework curriculum mentions *Corporate social responsibility and accountability* and *Market economics* verbatim, though in some cases at senior levels of schooling something along the lines of 'economic activities based on relevant curricular knowledge should be accompanied by evaluation of their impacts and responsible resource use' is proscribed. This is an important finding as current economic models and practices are among the chief contributors to unsustainability, whilst any future sustainable practices will have to deal with economic models that are sensitive to limits and the potential for economic growth and its impact on the other two 'pillars' of Sustainable Development (SD). And although our other economic elements, such as *Planetary boundaries* (C2) and *Sustainable development* (C6) go further in addressing these issues than *CSR and Market economy*, the latter two are of crucial importance for understanding the current unsustainable practices. This is clear in the case of *Market economy*, as the current globally dominant economic model with wide social and cultural role in most contemporary societies, including the states in our research. Especially as many of them are recent 'converts' to this economic model, struggling with its conceptual, but also social and cultural aspects. Though it might seem as CSR, a conceptually inferior element to overall *Market economy*, is an issue relevant more to the states of mature capitalism than the transitional countries that most of those in our research are, the global corporations are already by and large operational in these countries as well. Many of the current students are potential future local and international employees of those corporations. Finally it might be objected that the economic elements of cognitive content are too complex for the primary stage of compulsory education, but given their importance for the un/sustainable global practices there are strong reasons to include them in the compulsory primary education in the age-appropriate way. In **Romania** *Market economy* element is significantly represented in the framework curriculum, but the overall representation of the economic elements

is not high (cf. Figure 14), with only 5 economic content elements recorded overall. Of those, the two relating to Market economy end up taking the lion's share, although only indicating that *economic aspects of global history should be taken into consideration and that entrepreneurship should be encouraged*. In fact, the framework curriculum in **Romania** is richer in skills and values than cognitive content. In the subject curricula analysed in Phase B of the research the situation does not improve quantitatively or qualitatively. In **Macedonia\*\*** and **Georgia** the framework curricula indicate strong representation of CSR economic cognitive elements. Again, this is out of a relatively low representation of the overall economic cognitive content. In these two countries framework curricula are quite general documents, where the CSR is not explicitly mentioned but is melted into a pot of *general responsibility towards society/community and the environment*, in some instances translated into world of employment.

In **Georgia**, in the analysed subject curricula, general phrases of the understanding of (and ability to discuss) economic models, global interrelatedness and trade connections are repeatedly listed in senior grades of History and Geography. No more specific information is given in the curricular documents, nor are relevant codes found in the textbooks analysed (Natural sciences, Civics and History senior grades). Likewise, in **Macedonia\*\***, subject curricula do not explicitly mention CSR (though *social responsibility of individuals is mentioned*), and *Market economy references are combined with further general knowledge of the global social and trade interconnectedness* (Society and Civics subjects). In the Civics (8<sup>th</sup> grade) textbook there are several paragraphs at different places throughout where *employer and employee attitudes are stated to have an impact on both individual and communal wellbeing*, without further related illustrations or tasks.

### Planetary boundaries, production and/or consumption, sustainability, sustainable development

C2	Planetary boundaries	Planet Earth has limited resources for human consumption and emission mitigation (or absorption back into biological cycle).
C5	Production and/or consumption	Elements of contemporary market economy, role of companies, role of customers; cultural effects, environmental effects, examples from students' everyday life.
C6	Sustainability, Sustainable Development	Sustainable Development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.



**Figure 17.** Aspects of planetary boundaries and the extent of safe operating space. Reprinted from “Planetary Boundaries: Exploring the Safe Operating Space for Humanity” by J. Rockström, W. Steffen, K. Noone, A. Persson, F. S. Chapin III, E. F. Lambin, . . . J. A. Foley, 2009, *Ecology and Society*, 14(2).

The idea that our planet has limits, including the burden placed upon it by human activities, has been around for some time. In 1972, *Limits to Growth* was published. In 2009, a group of 28 internationally renowned scientists (Rockström et al., 2009b) proposed that global biophysical boundaries, identified on the basis of the scientific understanding of the Earth System, can define a ‘safe planetary operating space’ that will allow humanity to continue to develop and thrive for generations to come. This new approach to Sustainable Development was conveyed in the scientific journal *Nature* where the scientists made a first attempt to identify and quantify a set of nine planetary boundaries. The group proposed a framework for planetary boundaries which can potentially identify a safe operating space for government and management agencies. As a precondition for Sustainable Development scientists identified nine Earth system processes which have boundaries that, to the extent that they are not crossed, mark the safe zone for the planet. However, because of human activities, some of these dangerous boundaries have already been crossed, while others are in imminent danger of being crossed. According to Rockström and colleagues (2009b) three sectors out of the nine sectors of planetary boundaries have been crossed: climate change, biodiversity loss and nitrogen cycle (figures 17 above and Table 5 below).

**Table 5.** Planetary boundaries parameters and data. Modified from “How defining planetary boundaries can transform our approach to growth”, by W. Steffen, J. Rockström, & R. Costanza, 2011, *Solutions*, 2(3).

Earth-System Process	Parameters	Proposed Boundary	Current Status	Pre-industrial value
Climate change	<b>(i) Atmospheric carbon dioxide concentration</b> (parts per million by volume)	350	387	280
	<b>(ii) Change in radiative forcing</b> (watts per metre squared)	1	1.5	0
Rate of biodiversity loss	<b>Extinction rate</b> (number of species per million species per year)	10	>100	0.1 - 1
Nitrogen cycle (part of a boundary with the phosphorous cycle)	<b>Amount of N, removed from the atmosphere for human use</b> (million of tonnes per year)	35	121	0
Phosphorous cycle (part of a boundary with the nitrogen cycle)	<b>Quantity of P flowing into the oceans</b> (million of tonnes per year)	11	8.5 - 9.5	-1
Stratospheric ozone depletion	<b>Concentration of ozone</b> (Dobson unit)	276	283	290
Ocean acidification	<b>Global mean saturation state of aragonite in surface sea water</b>	2.75	2.90	3.44
Global freshwater use	<b>Consumption of fresh water by human</b> (km <sup>3</sup> per year)	4,000	2,600	415
Change in land use	<b>Percentage of land cover converted to cropland</b>	15	11.7	low
Athmospheric aerosol loading	<b>Overall particulate concentration in the atmosphere, on the regional basis</b>	To be determined		
Chemical pollution	<b>For example, amount of emitted to, or concentration of persistent organic pollutants, heavy metals and nuclear waste in, the global environment of the effects on the ecosystem and functioning of Earth system thereof</b>	To be determined		

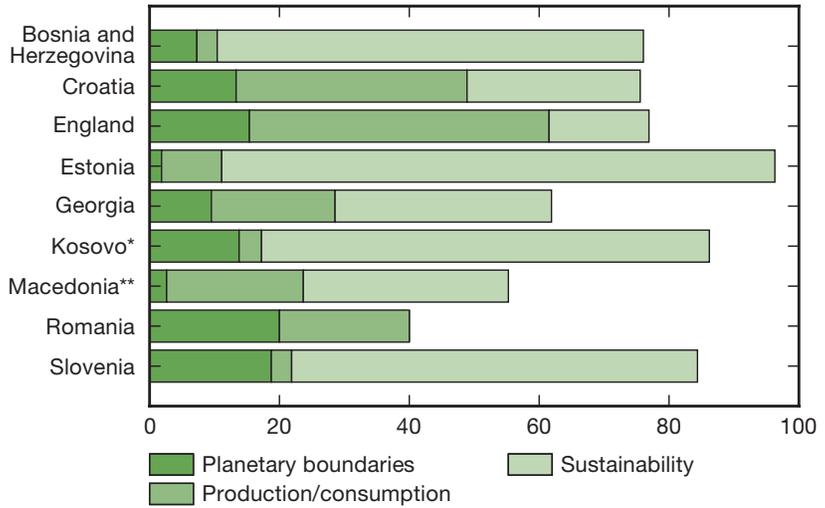


Figure 18. Relative presence (%) of C2 – Planetary boundaries, C5 – Production and/or consumption & C6 Sustainability, sustainable development in framework curricula (Phase A) across countries

The analysis of the national curricula revealed that the term Sustainable Development was among the most represented Cognitive Content elements in all 9 national curricula analysed. *Sustainability and sustainable development* was most frequently mentioned in the national curricula of **Bosnia and Herzegovina** and **Estonia**, followed by **Kosovo\*** and **Slovenia**. Interestingly enough, these terms never occurred in the national curriculum of **Romania**. *Planetary boundaries* were mentioned rather frequently in **Bosnia and Herzegovina**, **Croatia** and **Slovenia**. Production and consumption issues were rather evenly mentioned across the countries' national curricula, except for **Croatia**, where the issue was frequently mentioned.

## Selected Socio-cultural elements

Bosnia and Herzegovina

**cultural diversity** • gender equality • health

human rights • human security • new governance forms

Croatia

**cultural diversity** • gender equality • health

human rights • human security • new governance forms

England

**cultural diversity** • gender equality • health

human rights • human security • new governance forms

Estonia

**cultural diversity** • gender equality • health

human rights • human security • new governance forms

Georgia

cultural diversity • health

human rights • human security • **new governance forms**

Kosovo\*

**cultural diversity** • human rights

human security • new governance forms

Macedonia\*\*

**cultural diversity** • gender equality • health

human rights • human security • new governance forms

Romania

**cultural diversity** • human rights

Slovenia

**cultural diversity** • gender equality • health

human rights • **new governance forms**

Figure 19. Clouds of relative proportions of socio-cultural elements in framework curricula (Phase A) across countries. The figure includes only those elements that are represented in curricula in respective countries

“...to assist students in developing a humane worldview” (Georgia curriculum)

As was discussed earlier, most of the cognitive contents found in the framework curricula are the Socio Cultural elements. However, as Figure 19 above shows, this could be misleading if we do not examine which of the elements account for this high presence. Noticeable, *Gender equality* is missing (cf. Chapter below), as is to a large extent *New forms of Governance* except for **Georgia** (cf. Below). In **Kosovo\*** for example, *Health* is not one of the issues concerned, while in **Slovenia** *Peace and human security* is missing. **Macedonia\*\*** has the most balanced ratio between different socio-cultural elements. Noticeably, *Cultural diversity and intercultural understanding* are the most present and the ones that influence the overall presence of Socio Cultural elements (cf below).

### Out of Socio-cultural elements of ESD Gender equality is the least represented in curriculum

A3	Gender equality	In employment, career and salary; in political and social rights
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We begin by pointing out the importance of teaching gender equality in schools through ESD curriculum. UNESCO website states: “When girls are educated, livelihoods are improved, education is valued, and civic responsibility is enhanced. In most societies, however, deep-seated inequalities result in unequal access to and performance in education” (UNESCO, Retrieved on 21 November 2011. In the framework of the DESD International Implementation Scheme (UNESCO) it is clearly stated that the success of any form of ESD is related to gender equality along with human rights, peace and human security, cultural diversity and intercultural understanding themes (Wals, 2009, p. 28).

The most common form of discrimination is discrimination against women. A healthy society is one which value education, has a strong civic consciousness, and a transparent, democratic, equitable process of decision making. This is not possible without an active involvement of all citizens in equal shares. A long-lasting, sustainable society has at its core a fair treatment of all members, independently of their gender, because each individual has his/her own role, place and he/she has their own personal qualities with which to contribute to their community. Everybody should have the same opportunities of affirming and inserting themselves in their local community in order to become an active member.

It seems that, according to the findings, gender equality is not an issue. In framework curriculum **Macedonia\*\*** has 7 occurrences, **Croatia** has 5, **England** 4, **Bosnia**

and Herzegovina 2, Estonia and Slovenia 1, and Georgia, Kosovo\* and Romania none. In subject curricula the scoring is presenting like this: Macedonia\*\* 10 occurrences, Croatia 4, Bosnia and Herzegovina and Estonia 2, Slovenia and Romania 1, Kosovo\*, England and Georgia none. But what is more interesting is that **in textbooks we found no occurrences of the gender equality concept**. So, in the selected 'subject + grade' combinations, what is reaching the students concerning gender equality is equal to zero.

This problem requires a complex answer involving cultural and historical background. The countries in the study are most of them (except England), ex-communist countries, with a long history of non-democratic, unequal system of government. The traditional family still has a powerful image in those countries, with the woman in the role of mother, housewife and as a submissive person. Gender equality it's not an issue, because everybody knows "how the things are".

For ESD this is a great loss, because a society without equal partners has a great handicap in constructing a long lasting democracy and a healthy community.

### Governance old and new

A6	New forms of governance	New ways to manage governing of goods and communities, e.g. environmental governance (environmental aspects considered in decision making); democratic decision making (transparent, involving stakeholders).
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*New forms of governance* is one of the least represented SD concepts in the analysed curricula. The importance of this concept for Sustainable Development is crucial in the sense that children are taught about the inclusion of SD in political decision and in the process of state ruling. The framework of the DESD International Implementation Scheme (UNESCO) suggests that a full-fledged ESD requires the integration of the three dimensions, and among those the socio-cultural dimension refers to issues related to human rights, peace and human security, gender equality, cultural diversity and intercultural understanding, health, HIV & AIDS and *new forms of governance* (Wals, 2009, p. 28).

Looking at the data, we find that of all participating countries, Romania has the lowest number of *new forms of governance* (0) mentions and Georgia has the highest number (13) of occurrences in the framework curriculum. The *new forms of governance* coded content appears alone or in combination with other social cultural elements. When it appears alone it is closer to the intended

interpretation of the code, for example as *individual and public perception of the problem and to establish connections between different issues*, but when it is in combination with other concepts is hard to see how the concept of *new forms of governance* (**Georgia** framework curriculum) is a part of the phrase *to assist students in developing humane worldview* (**Georgia** framework curriculum); or *students acquire basic knowledge on technical measures to protect the environment (recycling, landfill management and organisation of paper and paper products), acquiring knowledge about new products made from waste paper material* (**Bosnia and Herzegovina** framework curriculum).

The exception is the **Estonian** curriculum where we find the concept in a clear recognisable form. **Estonia** has 5 occurrences of the concept:

#### Framework curriculum Social sciences

*...to know and respect human rights and democracy as well as knowledge of civil rights and duties and respective skills and conduct; to recognise cultural diversity and follow generally accepted rules of conduct*

*...understand and value democracy and human rights, follow generally accepted rules of conduct and abide by the law, know civil rights and duties and are responsible citizens;*

*...appreciate such values as freedom, human dignity, equal treatment, integrity, regard for others, tolerance, responsibility, fairness and patriotism as well as respect for oneself, other people and the environment*

#### Framework curriculum Natural sciences

*Acknowledging civil rights and obligations is connected to environmental issues.*

**Macedonia\*\*'s** framework curriculum has 6 occurrences of the concept, along the lines exemplified below:

#### Framework curriculum Social sciences

*Education about the respect of human rights and liberties and living in a democratic society through methods which support these values.*

In the **Slovenian** curriculum we find the following examples of expected outcomes. Slovenian framework curriculum has 7 concept mentions:

### Framework curriculum Social sciences

*Students ...*

*evaluate the relative merits of different development in terms of environmental issues and the expected consequences;*

*be trained to recognise the necessity of sustainable development and the responsibility to maintain the physical and biological living conditions for future generations...*

### Framework curriculum Civics

*Education for the environment stresses the importance of finding and implementing sustainable, environmentally sound solutions ...*

*... learning about the deeper interactions of natural processes and systems, economies, cultures, political structures and social justice(individual and group behaviour in favour of sustainable development).*

The quotes show how *new forms of governance* is presented in the framework curriculum, and how is intended to be seen onward in the subsequent curricula (subject curricula). **Kosovo\*** and **Croatia** have 2 occurrences of the concept; **England** has 4 and **Romania** 0.

But in Phase B, the situation is changing. The number of concept occurrences drops significantly in all curricula (except **Macedonia\*\***). In **Bosnia and Herzegovina** and **Croatia** we have 0 mentioning on the five subject curricula analysed, in **Estonia** we have 2 occurrences, in Natural Sciences 1<sup>st</sup> to 9<sup>th</sup> grades curriculum and in Literature 4<sup>th</sup> to 9<sup>th</sup> curriculum. **Georgia**, the country which had the highest number of concept occurrences in Phase A, has one occurrence in Civics: *students can study the foundations of civil society in general*. **Kosovo\***, **Romania**, **Slovenia** and **England** have 0 occurrences.

In the **Macedonian** subject curricula we have a special case. If in framework curriculum we had 5 occurrences of the concept in area B (science, socio-economic development, history, and economics), in subject curricula we have: 18 occurrences in Civic Education, 13 occurrences in Society, 4 in Knowing the Nature, and 1 occurrence in Biology. What happened in the Macedonian case is what is expected from straightforward curricular logic, meaning, the number of occurrences is supposed to increase when we come down from the principles

to the examples. In the framework curriculum we have stated the vision and the values that are important for a country educational system, but in the subject curriculum we must have the actual “personification” of the principle, the “brick” and “cement” of developing the concept. If in the subject curriculum *new forms of governance* do not appear, in the manuals it cannot be well represented and then, it cannot be well understood by the pupils.

In **Georgia's** case, the country with the highest number of occurrences in framework curriculum, and with a great number decreasing in subject curricula, there are no occurrences of the concept in the analysed textbooks (History, grade 9; Civics, grade 9; Nature, grade 5). Along with **Georgia, Estonia, Romania, Kosovo\***, **Slovenia, Croatia, Bosnia and Herzegovina** had no occurrences of the concept.

Back to **Macedonia\*\*'s** case, in the textbook for Society grade 4, we find 3 lessons that touch upon new and traditional forms of governance (*Basic principles of how democracy in the country is organised, and institutions in the municipality*). We find illustrations (*a community organising*) and five tasks relating the concept of new forms of governance. There are 18 lessons about *new forms of governance* in Civic Education grade 8, with illustrations and numerous tasks, all of them process tasks, ensuring the understanding of the concept.

Thus, in most countries, the intention from the framework curricula is fading, *new forms of governance* being a pale, sporadic apparition in the subsequent documents (subject curriculum and textbooks). This raises the question: why is this happening? Well, most framework curricula state general principles, let's call them wishes. But they remain on the paper as long as the subject curricula and, most important, the textbooks do not act to develop through lessons, tasks and discussions, the principles stated or wished in the framework curricula. We cannot respond accurately to this question, because we didn't intend to analyse why textbooks authors didn't add a concept or another. But we can say that a decreasing number of SD concept occurrences in subject curricula increase the chance for the concept to be weakly represented in textbooks and from there to be weakly (or not at all, like in Georgia's case) represented in the consciousness of the pupils. Another conclusion is that when the concept is not clearly stated and when is mixed with other concepts, the chances to be addressed in related documents, like subject curricula, is dropping considerably (**Georgia's** case).

The good practice example is the **Macedonian** case. We observed a good evolution of the concept from the principle to particular cases present in the textbooks. The reason for this is the existence of a clearly stated concept in

the framework curriculum, and, most of all, its accurate presentation in the subject curricula. This is the most important thing if we want to have a good representation of the concept in the textbooks, which is what most readily reaches the students.

### Diversity, understanding and acting with respect

A4	Cultural diversity and intercultural understanding	Tolerance to other values and perceptions
SV2	Acting with respect to others	In this case 'others' may include other people, other communities (anthropocentric) or other beings (biocentric).

Cultural diversity and intercultural understanding is one of the most important prerequisites for Sustainable Development if we approach it as a global issue for which only global reciprocal solutions will work. Therefore any ESD curriculum must provide knowledge on cultural diversity, as well as appropriate skills and values which will help future generations to respect, protect and maintain cultural diversity and enable students to act upon those beliefs. According to UNESCO and DESD, any ESD must be locally relevant as well as culturally appropriate for it to be effective. Given the tapestry of the countries in our initiative and the fact that they are all multi-ethnic societies, the importance of cultural diversity and intercultural understanding becomes crucial at the local level of each country, too. Intercultural approach in education should provide a model for addressing cultural diversities and integrating values of intercultural understanding in education should provide a way for these values to become an intrinsic part of students' identity. These in turn, would allow prevention of ethnic, religious, linguistic, cultural and other divides. Should these become universal values, it would enable the world to move toward a more sustainable future. Acting with respect to others is a first step towards this long- term goal.

According to our research-coding matrix, *Cultural diversity and intercultural understanding* was placed under the Socio-cultural elements and described as tolerance to others' values and perceptions. While *Acting with respect to others* was placed under the Skills and Values content and described as acquiring skills and values that prepare student to act with respect to others where 'others' may include other people, other communities (anthropocentric) or other beings (biocentric). The country researchers however, as our findings show, concentrated on 'others' as being other people and other communities and rarely used this element to depict respect to other beings, even though most

of the national documents deal with respecting and protecting the environment which could have led the researcher to code such entries as *Acting with respect to others*. Since this was not the case, it is not surprising that those two elements - *Cultural diversity and intercultural understanding* and *Acting with respect to others*, often appear together and therefore we have decided to describe and discuss them together.

Looking at our data, as pointed out above, we find that the cognitive content of *cultural diversity and intercultural understanding* often goes hand in hand with promoting the value of *respecting others* and teaching the skills for acting on these values. Prior we elaborate on their appearance together we will address the findings on the *Cultural diversity and intercultural understanding*.

The data shows that *Cultural diversity and intercultural understanding* covers over 50% of all **Socio-cultural Cognitive** content. Out of all **Cognitive Content** elements, *Cultural diversity and intercultural understanding* has the highest frequency with almost 18%. It is actually the element that is responsible for social and cultural elements of ESD cognitive content (as selected for the coding matrix) being the most represented content overall. As these findings are cumulative results of all countries findings, they can only be used as an indicator, as high frequency in one country could skew the results and would tell us little, should we take a closer look at individual countries.

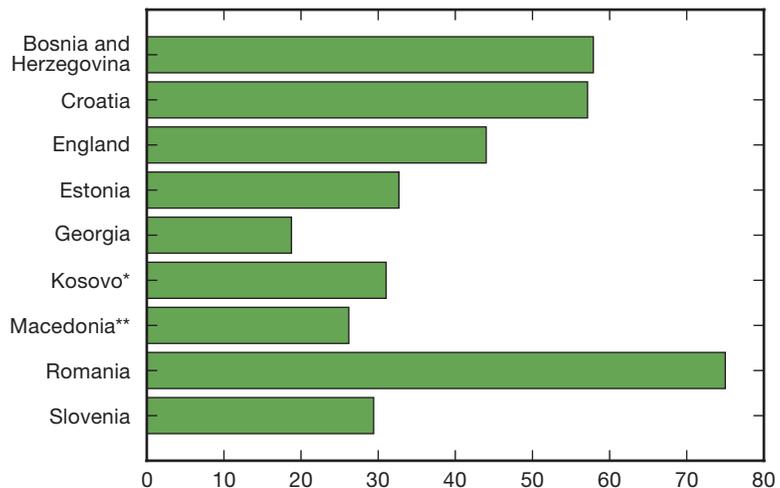
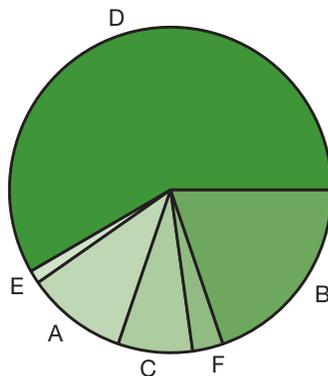


Figure 20. Relative proportions (%) of Cultural diversity and intercultural understanding (A4) among socio-cultural elements in framework curricula (Phase A) across countries

As seen on the figure above (figure 20), in 3 countries of the research (**Croatia, Bosnia and Herzegovina** and **Romania**) the percentage of frequency of *Cultural diversity and intercultural understanding* is well above 50% and in **Romania** it is as high as 75%. In **England** and **Macedonia\*\***, although with relatively smaller percentage of frequency - 44% and 26% - respectively, it still makes the ones with highest proportion among other Socio Cultural elements, while in **Estonia, Georgia** and **Slovenia** it is the second highest represented element among Socio Cultural elements.

It is interesting to note that both of the elements discussed are present in all Curriculum areas. *Cultural diversity and intercultural understanding* is the most present in Area D – arts, humanities and languages (communication) - followed by Area B – social sciences, socio-economic development, history and economics. These somewhat surprising findings are the results of foreign language subjects in Area D in which respect for cultural aspects of the countries whose language is taught are coded as *Cultural diversity and intercultural understanding*. Still, it is encouraging to learn that cultural diversity can be a part of such Areas as Area A- natural sciences, physical environment and technology and even Area E – mathematics. However, the most surprising result is that **Area C – values and ethics education, citizenship education, religious education and philosophy is not the one with the highest frequency of this element**. A possible explanation for this is the fact that this area covers an otherwise very sparse curricular content, with a relatively low number of teaching hours and sometimes relegated to extra-curricular activities, thus in absolute terms it struggles to compete with more loaded major content areas such as social sciences and languages.



**Figure 21.** Relative distribution of Cultural diversity and intercultural understanding across curriculum areas<sup>5</sup> overall in framework curricula (Phase A)

<sup>5</sup> Curriculum Areas – Area A natural sciences, physical environment and technology; Area B – social sciences, socio-economic development, history and economics; Area C – values and ethics education, citizenship education, religious education and philosophy; Area D – arts, humanities and languages (communication); Area E – mathematics; Area F – physical and health education

“The education of the individual, in addition to promoting his own innate abilities, would attempt to develop in him a sense of responsibility for his fellow-men in place of the glorification of power and success in our present society.”  
(Einstein, 1949)

## Acting with respect to others

This element was placed under the Skills and Values content as one of the 21 elements. Almost 14% of all Skills and Values entries in the curricula are on *Acting with respect to others*. It has the second highest frequency right after *Acting with responsibility locally and globally* (SV1). As was the case above this would tell us little should we not look at the *Acting with respect to others*, just as *Cultural diversity and intercultural understanding* is also present in all curriculum areas, and the high presence of it in Area D – arts, humanities and languages (communication) - reflects the foreign language subjects.

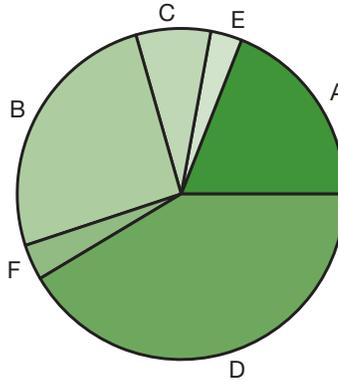


Figure 22. Distribution of Acting with respect to others across Curriculum areas<sup>6</sup> overall (see Fig. 21 for presentation of areas)

<sup>6</sup> Curriculum Areas – Area A natural sciences, physical environment and technology; Area B – social sciences, socio-economic development, history and economics; Area C – values and ethics education, citizenship education, religious education and philosophy; Area D – arts, humanities and languages (communication); Area E – mathematics; Area F – physical and health education

In order to better understand how these elements are presented in curriculum documents when coded together, we have selected several examples from different countries.

In **Bosnia and Herzegovina** where the presence of both elements is surprisingly high, a typical curriculum entry would loosely translate as *Developing skills of empathy and nurturing the spirit of religious tolerance*, respect for others and the different. An interesting example from **Bosnia and Herzegovina** includes teaching these 2 elements through mathematics where the curriculum states that students should learn to *respect their own point of view as well as the point of view of others* (mathematics, grade 2), whilst in grade 5 mathematics they will learn about *respecting the difference and tolerance*.

In **Estonia**, in Technology classes students become *Familiar with the cultural traditions of different countries and the reasons behind their emergence fosters sensible attitudes towards other nations. While social subjects provide the basis for accepting ideological diversity and for willingness to have a dialogue with supporters of different worldviews.*

In **England**, at Key Stage 3 Geography they will learn to *Appreciate the differences and similarities between people, places, environments and cultures to inform their understanding of societies and economies.*

While in **Kosovo\***, already in Grade 1 they will *Foster cultural awareness and intercultural understanding.*

As both our quantitative and qualitative findings show, the Framework curriculums of the 9 countries are rather rich with the content on *Cultural diversity and intercultural understanding and Acting with respect for others.* The qualitative findings show the diversity in the curriculum areas and subjects in which these topics could be found, as well as a wide variety of student age groups they can be addressed at. The examples above also show us how dry and innovative the curriculum documents can be at the same time and that without seeing them implemented in classrooms and methods used to teach them, all of it could mean very little. Nevertheless, the actual presence of these elements across the variety of curriculum areas and subjects as well as age levels is encouraging.

The reasons behind the richness of this content could be numerous. Our assumptions and reading of the background materials on the countries point to a few of these. All of the countries of the research are multi-ethnic societies and therefore have incorporated into their educational documents the cultural diversity that reflects the situation in their society.

In **Croatia** and **Bosnia and Herzegovina**, where this diversity is especially high, this might be explained by the recent wars and the understanding by society that education must be the driving factor in building peace and intercultural understanding in the post-war situation. The **Macedonian** situation most certainly reflects the strife by their educational system to deal with ethnic issues in the country and the large proportion of bilingual schools. In **England**, the long tradition of multicultural education in a society that has been dealing with it for many years certainly plays a role. In **Romania**, there is a political explanation behind the results. It has been over a decade since UDMR – a party ‘representing’ Hungarian ethnic minority – has been part of a coalition government. At the present, the Union holds the Ministry of Culture, Ministry of Health and the Ministry of Environment and Forests. Over the years they have built a powerful minorities department in the Ministry of Education and they manage to have a fair and rich representation of all minorities in the country in the textbooks and curricula. There is public education in minorities’ languages which includes the possibility of taking final exams in their mother tongue. In **Romania**, intolerance in the public sector and in public appearance is at a low level. But political correctness is assured in all parts of education documents, public and administration documents and in all official appearances.

What should not be disregarded is the socialist heritage of 8 of the countries in the research and the fact that despite all its faults (and there were certainly many), the socialist system was a value-based one and incorporated cultural diversity as one of its values. It would not be surprising if the current situation also reflects this.

The reasons behind the presence of the content should also serve as warning about how it is taught. As seen in the examples above, although the country researchers coded these to correspond to both Cognitive Content and Skills and Values content, a lot of these entries are on the cognitive level. This might imply that students are served with this knowledge without it becoming a part of their identity and values set. Therefore we should not assume that the very presence of the content is truly an ESD presence.

Regardless of the reasoning behind its presence and the framing of it, the very fact that it is present with such high frequency in most of the countries studied provides a window of opportunity for ESD. Policy makers and educators should carefully consider how the content should be framed and which methods should be used for it to be thought out more effectively. What it does however prove, is that there is space in the current teaching for ESD; that there is no need to add

new subject or extra content to the already overburdened curriculum to allow ESD into schools. Clear modification of the existing foundation should be sufficient.

## 5.2. Skills and Values

The original Coding Matrix contains a total of 21 skills and values codes (with skills outnumbering values), but upon initial analysis of findings, a grouping of skills (and values) arose (cf. Methodology). This is not surprising as some of them are derived from single concepts whilst others are deliberately expanded so as to obtain a more detailed view of the curricular content. This is most prominent in the case of Basic science skills which were deliberately expanded into explicit key science processing skills with mathematical manipulation added. Initial inspiration for the skills elements of the coding matrix came from the listing of concepts associated with definitions of ESD as listed in the UNESCO DESD (Wals, 2009) mid-term report (cf. Methodology). The coding matrix list could be considered short on values, though many skills framings also contain less visible value content (e.g. participation in democratic decision-making). We deliberately focused on Values of respect and responsibility (SV1 and SV2) as the cornerstones of the sustainability value framework. Also we expected the national curricula to be value laden, whilst being much poorer on adequate skills. This remains an unchecked assumption and a limitation of this research.

### Respect, responsibility, reflexivity and complexity are the foundation of ESD skills and values in national curricula

Nonetheless, in many of the countries Values of respect and responsibility is among the most represented of the 5 skills and values groups. It is the most represented skills and values group in **Croatia** and **Bosnia and Herzegovina**, and among the more strongly represented in **Estonia, Slovenia, Georgia** and **Macedonia\*\***. Unless these particular values were recognised by the curriculum designers as more significant than others, we can expect that national curricula contain a sizeable quantity of explicit values listings of all kinds. In **Kosovo\*** and **England**, *Values of respect and responsibility* are less represented than other skills and values groups, but still not negligible, and if combined with other possible value listings would again give an extensive value framework for the national framework curricula. In **Romania**, however, this is a seriously underrepresented skills and values group, either because of the limitations of the

research or a different orientation of curricular design (focused on knowledge, rather than value frameworks), but might suggest a direction for stronger alignment of the **Romanian** framework curriculum with the goals of ESD.

### Bosnia and Herzegovina

basic science skills • community cooperation • complexity understanding  
managing change • respect and responsibility

### Croatia

basic science skills • community cooperation • complexity understanding  
managing change • respect and responsibility

### England

basic science skills • community cooperation • complexity understanding  
managing change • respect and responsibility

### Estonia

basic science skills • community cooperation • complexity understanding  
managing change • respect and responsibility

### Georgia

basic science skills • community cooperation • complexity understanding  
managing change • respect and responsibility

### Kosovo\*

basic science skills • community cooperation • complexity understanding  
managing change • respect and responsibility

### Macedonia\*\*

basic science skills • community cooperation • complexity understanding  
managing change • respect and responsibility

### Romania

basic science skills • community cooperation • complexity understanding  
managing change • respect and responsibility

### Slovenia

basic science skills • community cooperation • complexity understanding  
managing change • respect and responsibility

**Figure 23.** Clouds of relative proportions of skills and value groups of elements in framework curricula (Phase A) across countries. The figure includes only those groups that are represented in curricula in respective countries.

The most represented group overall and in most individual countries is the *Reflexivity and complexity understanding group*. In **Croatia** and **Bosnia and Herzegovina** it is the second most represented, whilst in all other countries it is the most represented skills and values group. This makes all the framework curricula analysed a good starting point for ESD, as these two can be seen as the most ESD-relevant skills and values groups. If one was starting to look for fundamental ESD skills and values they would rest on values of respect and responsibility, capacity for reflective and systemic thinking and understanding of complexity across disciplinary curricular content. There is no explicit proscription on how much of the other skills and values groups should be present relatively to these fundamental groups, nor how much overlap between them should be. There is no room in this report to enter into the nuances of the combination of different skills and values groups, especially the two fundamental ones with others. Many of the curricula analysed combine two or more skills and values groups in one curricular content entry (for example content related to *Values of respect and responsibility and Community cooperation skills*).

Despite the lack of proscription of an ideal mix of skills and values groups, the findings illustrated in Figure 23 above, indicate that in most countries *Values of respect and responsibility and Reflexivity and complexity understanding* skills and values groups take up more than 50% of all ESD-relevant skills and values curricular content. In **Croatia, Bosnia and Herzegovina** this works in favour of the Values group, whilst in **Romania, Kosovo\***, **Estonia** and **Slovenia** it is the other way around. In **England, Macedonia\*\*** and **Georgia** the overall spread of all skills and values groups is more even. In Macedonia\*\* and Georgia this is mostly due to the very general statements of the framework curriculum which at once combine many laudable skills and values in many curricular entries. Such situation can be to the detriment of their implementation potential (cf. *Managing change and Community reviews* below), and moves the onus of implementation to the subject curricula and textbooks. In **England**, the *Reflexivity* group dominates, followed by *Managing change*, whilst value-rich groups could be quantitatively strengthened.

## Managing change and uncertainty

### What kind of change and why should primary schoolers train for change?

Though it is important to familiarise the students with environmental and economic facts, and justifying calls for sustainability, educational processes also have to provide skills to facilitate critical thinking and change management across a range of subjects. Given the relatively stronger tradition of critical thinking skills in the countries analysed, we focus here on the specific group of change and risk management skills. These are important in helping students use the cognitive content to think creatively and change behaviour so as to increase preparedness to adapt to futures which differ from the 'normal course of events'. With views to climate change, this becomes increasingly sharpened by an instability and uncertainty inherent to the process.

When facing the challenges of transition of our societies to the path of sustainability, the future active citizens will require a set of skills to manage change processes and make decisions in the conditions of uncertainty. This will require extracting the relevant knowledge from the stock of other content found in education and drafting appropriate action strategies. Not least because sustainability includes challenges related to understanding, decision-making and timely action so as to bring about change, as well as facing the 'tragedy of change' (accepting the loss of some things to keep hold of others). Though basic understanding of the material foundation of the problem is the necessary initial step, Dietz, Ostrom, and Stern (2003) argue that conceptualising and educating for the activities that will enable the sustainability of Earth's capability to support diverse life forms, including a reasonable level of quality of life for human populations and individuals, requires reaching difficult decisions amidst conditions of uncertainty, complexity and significant bio-physical constraints as well as conflicting human values and interests. The required skills go further than just the competence to choose the right course of action based on the best available evidence, something any good education under any circumstances surely aspires to. Given that humanity is facing unpredictable and rapid changes in the biophysical environment, as well numerous social and cultural interpretations of the said situation, ESD needs early references to 'risk society' and development of skills and values appropriate to situations in which "both stakes and uncertainty are very high" (Mochizuki & Fadeeva, 2010, p. 397).

We present here a reflection in different national framework and subject curricula of a group of skills covering the following codes from the coding matrix: SV5: futures thinking; SV6: planning and managing change; SV9: decision-making, including in uncertain situations; and SV10: dealing with crises and risks. The extensive examples given show just how topics related to Change management skills are included into the curricular documents analysed.

### How much of Change management content was found in different countries curricula?

We talk only of the relative representation of different skills groups as the national curricula differ to such extent in structure and quantity of content that it is pointless to make comparisons of absolute quantitative findings. Examples presented here are translations modified to illustrate a broader range of the exact curricular proscriptions from various framework curricula and specific subjects. Their main purpose is a qualitative illustration of what *Managing change and uncertainty* involves in the different countries' educational documents, not to extensively map the overall country findings.

In most countries this SV group is moderately represented in the framework curricula: less represented than the *Values of respect and responsibility and Reflexivity and complexity understanding*, but more than *Community cooperation* and *Basic science skills*. Exceptions to this rule are **Croatia** and **Bosnia and Herzegovina** where it is the least represented of all SV groups, and **Georgia**, **England** and **Macedonia\*\*** where it is more than or as represented as the *Values and Reflexivity* groups.

**Georgia** is an interesting case where all five SV groups have about equal representation in the framework curriculum. In **Macedonia\*\*** and **England**, the distribution of SV groups is similar, with *Reflexivity and Managing change* more or less leading the way. **Croatia** and **Bosnia and Herzegovina** have the relatively lowest representation of SV from this group.

### Presentation of content related to Managing change and uncertainty in different countries

Of the countries where this SV group is amongst the more represented ones (**England**, **Georgia** and **Macedonia\*\***) it is mostly focused on the social sciences, though in the Macedonian case there is the most even spread among curricular areas.

In **England**, the relevant skills and values are mostly focused in Social sciences (History and Geography), as well as Personal, Social and Health Education (PSHE) at senior stages of education. There is no clear division within the skills group into future change observation and management of risks and crisis situations. Factual knowledge concerning causes of environmental change is also included here as a cognitive prerequisite of change management.

The factual knowledge aims to provide understanding of the interactions between humanity and its physical environment, including how the latter changes and how it influences human communities. Observing change is recommended in interactions (*social, economic, environmental and political connections*) between different geographical regions at different scales, in peoples' beliefs and attitudes through time and the factors that influence it.

#### England: Framework Curriculum: Social Sciences

*Interactions between people and their environments, including causes and consequences of these interactions, and how to plan for and manage their future impact.*

The skills concerning risk management explicitly focus on individual development, *financial and career choices* and management of finances. There is also a general recommendation to *take risks and learn from mistakes*.

In the other curricular areas in **England** these skills are more closely interwoven with basic science skills, community planning as part of active citizenship, risk taking, linguistic communication in unfamiliar contexts and decision-making based on mathematical skills.

### England: Framework Curriculum: other areas

*to consider how and why decisions about science and technology are made, including those that raise ethical issues, and about the social, economic and environmental effects of such decisions.*

*energy transfers can be measured and their efficiency calculated, which is important in considering the economic costs and environmental effects of energy use*

*...actions that individuals, groups and organisations can take to influence decisions affecting communities and the environment*

*assess critically the impact of their actions on communities and the wider world, now and in the future, and make recommendations to others for further action*

*the challenges facing the global community, including international disagreements and conflict, and debates about inequalities, sustainability and use of the world's resources*

*study of a range of artefacts from contemporary, historical, personal and cultural contexts ( and have) understanding of art, craft and design processes, associated equipment and safe working practices.*

*Applying and transferring skills in a wide range of contexts, demonstrating flexibility and adaptability and making independent judgements about how to communicate effectively and sustain formal interaction, particularly in unfamiliar contexts.*

In the **Macedonian** case there is a stark difference from the above in that almost all groups of SV content come together in most lines of content of framework curricula. This is because the relevant skills and values are mostly implied through the very general statements of educating citizens to be ready to cooperate, to think through increasing complexity and to be prepared to manage differences and changes that may arise from these.

### Macedonia\*\*: Framework curriculum: Arts and humanities

*Learning foreign languages for communication and learning about other cultures and achievements of other nations in the world.*

In the other curricular areas, Management of change and uncertainty is even more obscured behind general expectations of critical and complex thinking, as well as protection of personal wellbeing.

Given that the **Macedonian** Framework curriculum is a very general document which only sets out the foundational principles of compulsory education, it might be expected to cover the relevant SV group at this general level. At the level of subject curricula, *Change management* skills appear mostly in the social science subjects, but even there only at a general level that fails to address change management explicitly.

#### **Macedonia\*\*:** Subject curricula: Society, Civic education, English language

*Acquire knowledge about the ways of setting and resolving public issues*

*Get acquainted with basic problems in the world and understand the participation of the Republic of Macedonia\*\* in resolving the problems in the world.*

*Acquire certain linguistic and socio-linguistic knowledge and skills that will enable them to use these in different situations during the communication.*

*Analyse when and who needs help when someone's life is endangered and to develop a sense of solidarity*

*Know the consequences of war and to estimate casualties in conflicts.*

The **Georgian** framework curriculum is more concerned with crisis situations in social sciences than the previous two. There are general demands for familiarity with emergency procedures in crisis situations, but almost no specifics concerning futures thinking and change management. Physical education is recommended as contributing to *instant decision-making* skills. In social sciences we find:

#### **Georgia:** Framework curriculum: Social science (emergency response)

*Students develop a strong will, develop the ability to act in emergency situations and act safely so as to help one another, to protect themselves and avoid perishing in various types of emergency situations.*

*Assessing hazardous situations for life and health.*

### Georgia: Framework curriculum: Social science (Interaction with living environment and human community)

*Living within their natural environment, learning about causes of damage to the environment through human action, how to preserve and protect the natural environment.*

*Modelling different social situations and processes.*

Beyond that, change management is implied in the general statements about *understanding the world* in other curricular areas. Again, this is a general framework curriculum document, so more can be expected from the specific subjects reviewed under analysis. But even less is found there, with barely any references to global environmental change and sustainable development. Quantitatively, these references are negligible, and this starkly changes the position from the beginning of the chapter where **Georgian** curriculum was one of the few with significant representation of the Change management SV group.

Of the group of countries with mid-range quantitative representation of *Change management* SV group, in **Estonia** and **Kosovo\*** it is most represented in the natural sciences, whilst in **Slovenia** in the social sciences. In Romania it is mostly focused in the Arts, humanities and languages section of the curriculum, but as the curricular text is very basic and general we cannot talk of a great difference quantitatively.

In **Estonia**, the Managing change SV group is mainly focused on understanding the factual conditions of change and basing predictions on them, whilst change management skills are dealt with in general terms. *Change management* facts in the framework curriculum are mainly focused on the interaction between humanity and the environment, as well as on environmental protection.

### Estonia: Framework curriculum

*It is important for Natural Sciences to shape students who are motivated and interested in the field of nature, who notice and acknowledge environmental problems, know how to solve them, make competent decisions and foresee their effects on the natural and social environments.*

*The development of the students' social competence takes place alongside the evaluation of the effects of human activities on the*

*natural environment, acknowledging local and global environmental problems and finding solutions to them that form the focus of teaching.*

*...analyse the possibilities and risks arising from the implementation of technology*

*...are able to understand the material causes and consequences of the changes which have occurred in the history of human society or are taking place at present;*

These general principles are more fitting to the framework curriculum, but in the subject curricula we don't find more explicit change management skills.

#### **Estonia: Subject curriculum: Foreign languages**

*The skills of solving everyday life problems and making competent decisions are important, as they form the basis for coping in the natural and social environments.*

These are again examples of general skills that might include change management, but offer no explicit examples or practice. There are calls for students to *think about their future*, but no explicit exercises suggested.

In **Kosovo\*** this is second to last of the SV groups represented, only *Community cooperation* skills fare worse in the curriculum. It only appears in the framework curriculum in the Natural Sciences. In the specific subject curricula it again appears mainly in natural sciences related to changes in the environment. There is no recommendation how to manage change, save from awareness that its negative aspects should be prevented.

#### **Kosovo\*: Framework curriculum: Natural sciences**

*Exposure to environmental issues and concerns and real-life topics through project work that will help them consolidate their knowledge and further develop their skills and attitudes*

*Formulating hypotheses to explain natural phenomena.*

In the subject curricula we find explicit factual content about the influence of human actions on the immediate environment, and recommendations on how to act in everyday life in a more 'environmentally-friendly' way. Though at first glance these may not be perceived as the *Change management* skills for the global environmental changes expected in the 21<sup>st</sup> century, in a society that may only be introducing Western 'environmental protection' values, this may be exactly what is required from the specific skills for change in behaviour.

### **Kosovo\*: Subject curricula: Man and Nature, Physics, Geography**

*to recognise and implement behaviour necessary for avoidance of 'human factor' accidents.*

*to recognise that preserving the environment is beneficial to our society from health and social perspectives*

*to recognise the problems of environmental pollution (with chemicals, artificial manure and other substances) that harms human health;*

*to be aware that maintaining a healthy environment provides benefits for the school and wider school community;*

*to respect the rules (norms) of placing the waste in certain places classified according to types of polluters (glass, metal, plastic and other waste);*

*to describe the possibility of using waste i.e. their processing (recycling) for life's necessities (energy, industry, agriculture etc);*

*to protect the environment by planting trees, flowers and by increasing green surfaces (at school, home and other places)*

### **Factual knowledge:**

*to provide arguments for suitability of a geographic environment for developing agriculture economy;*

*to explain which are the regions at most risk from air, water and soil pollution;*

*to comment the growing risk from geographic environment pollution*

In the **Slovenian** framework curriculum *Community cooperation* skills and *Basic science* skills are less represented SV groups than *Managing change*. In the *Natural Science* section of the framework curriculum it appears as

factual knowledge about the connections of man and nature and about human responsibility for changes in nature. In the early natural science subject curricula, children are instructed to observe natural changes in the environment (seasons) and to learn about the human influence on environmental change.

### **Slovenia: Subject curricula: Natural science grades 1-3**

*The focus is on changes in nature and interdependence of living and inanimate nature and the human dependence on seasonal changes in the nature. Students are encouraged to identify a simple connection between humans and the environment. To directly experience how humankind changes the natural environment and how it is deteriorating the habitat for creatures who lived there. To learn about the seasonal changes (weather, seasons) and changes caused by man.*

*To recognise the pollution from traffic: air, water, soil (choose less polluting means of travel: on foot, by bicycle, train, if possible).*

In senior years there is an emphasis on what individual students can do to minimise their impact on environmental change. No instruction seems to be explicitly dedicated to management of unavoidable change. The focus is more on the environmental impacts of development, especially related to scientific progress and technology. In Geography there is an emphasis on principles of environmental management under changing conditions.

### **Slovenia: Subject curricula: Technology, Social sciences (esp. Geography)**

*Students learn to wisely change the environment.*

*Students need to realise that when changing the environment some changes cannot be reversed. Students recognise that we need to conserve natural resources. This means that it is necessary to maintain the diversity and variety in nature.*

*Recognise that technological development cannot be stopped or reversed.*

*Students realise that engineering and technology have beneficial impacts on human comfort, whilst having an adverse impact on the environment. Actions should be sought which prevent adverse affects, or to reduce them if prevention is impossible. This helps them develop the flexibility to be creative to live in a world of constant change.*

*Geographical knowledge is an integral part of basic education, because it contains knowledge of the country and the world and on environmental protection and rational management of it. By implementing this curriculum we want to give future “world managers” the foundation for understanding the relationship between man and nature, particularly for understanding environmental problems. In geography pupils are trained to be responsible, committed and show solidarity towards the natural and social environment and to solve spatial problems with mutual harmony between nature and man in mind.*

*The task of school geography is therefore [...]:*

*to promote responsible decision-making on important matters such as protection of a healthy environment;*

*to acquire a basic knowledge of the natural geographical and socio-geographical processes and events at local, regional and global level and their interaction;*

*to learn about the need for rational use of natural resources and the associated protection of the natural environment for future generations*

They also taught how to change their environment in an acceptable manner through reliance on appropriate technology. But even in the social sciences, little is said about social changes and their management, whilst facts about technological influences on social change, and the social impacts of environmental change are mentioned.

In the Geography curriculum, the notable phrase classifying students as the future ‘governors’ of the planet appears. There is no further methodological instruction of what that governing involves. In secondary education, where differentiation according to interests takes place, students in general ‘grammar’ education can take the Environmental Education course where many skills and values related to managing change in the environment appear. The Mathematics section of the curriculum also notionally invokes the *change management for sustainability*. Physical and health education rest on principles that include *decision-making, and taking responsibility for environmental protection*. At the subject curriculum level this translates into collection of further factual knowledge on how changes in the environment can produce changes in societal wellbeing, as well as on how development can result in environmental change, but there is no practice in change management, futures thinking or dealing with crises.

In **Romania**, in the overall representation, *Managing change* SV group takes more curricular content than the *Community cooperation* and the *Values of Respect* groups. It is relatively underrepresented in the framework curriculum, where general *risk-taking* and *problem solving skills* are encouraged, but no explicit mention of change management and futures thinking.

In the subject curricula, natural science subjects such as Biology have lessons on *humans inducing change in the biophysical environment and the practice in 'ecological thinking' and planning*. There is also a request for *familiarity with risks stemming from the scientific practice (pollution, health hazards)*.

Interestingly, the History curriculum explicitly calls for futures thinking as one of its educational outcomes: *Futures thinking by understanding the role of history in the present life, and prediction of future patterns based on historical experience*.

**Croatia** and **Bosnia and Herzegovina** are the two countries with lowest relative representation of *Change management* SV group in the framework curriculum. In the **Croatian** case this does not indicate the absence of relevant skills and values from the curricular proscription, but their relative underrepresentation with respect to other SV groups. In absolute terms the Croatian framework curriculum covers all the standard man-impacts-nature facts. The relevant skills appear as *familiarity with factual descriptions of the natural and anthropogenic changes in the living environment, and steps for environmental protection* (Natural Sciences section), but also calls to *trace social structural changes in the immediate environment* (Social Sciences section). There is no call for *Managing change* SV group outside these two curricular sections. As the framework curriculum in **Croatia** is more recent than the specific subject curricula, the latter contain fewer and non-specific skills related to change management.

The relevant **Bosnia and Herzegovina** curriculum analysed (Canton of Sarajevo) contains virtually no mention of the skills for 'futures thinking' and change management. At a very general level, the framework curriculum asks that students should be familiarised with the *past, present and future* of their local physical and social environment. The situation is no better at the specific subject curriculum level, where only one of the analysed subjects (My Environment) trains for the skills of *future planning* in one's personal affairs.

## Facts about change, not skills for change

As the coding matrix contained no cognitive content terms explicitly citing overall environmental change or interaction between humanity and nature, most of the factual content related to these changes is included into the change planning and management as a factual prerequisite. Thus, overall, most of the *Change management* content is concerned with observing an anthropogenic environmental change and learning about its technological and developmental causes. This makes most of the existing curricular content at best appropriate to the ‘experiencing’ and ‘reflecting’ phases of experiential learning as set out in Kolb (1984).

- *Students realise that engineering and technology have beneficial impacts on human comfort, whilst having an adverse impact on the environment. (Slovenia)*
- *Analyze when and who needs help when someone's life is endangered and develop a sense of solidarity (Macedonia\*\*)*

These can thus be seen as the first step towards completing the development of skills and values for change management, with ‘conceptualisation’ and ‘planning’ phases to be addressed next (Kolb, 1984). Of course, a broader outlook that would combine this skills group with the much more represented one of *Reflexivity and complexity understanding* (SV3, SV4, SV7, SV8 in the Coding Matrix) would provide a necessary deeper understanding of the situation, as a prerequisite of the said two further stages. The latter skills group also contains references to systemic thinking, which in turn is important for managing situations marked by complexity, as the required sustainability transitions undoubtedly are (cf. Tilbury, 2011).

- *Interactions between people and their environments, including causes and consequences of these interactions, and how to plan for and manage their future impact. (England)*
- *By implementing [the Geography] curriculum we want to give future “world managers” the foundation for understanding the relationship between man and nature, particularly for understanding environmental problems. (Slovenia)*
- *Students develop a strong will, develop the ability to act in emergency situations and act safely so as to help one another, to protect themselves and avoid perishing in various types of emergency situations. (Georgia)*

## Community cooperation

### Community cooperation skills in schools beyond idealism

Whilst the previous skills group emphasised capacity building for change management and decision-making in conditions of uncertainty, in the current group supplementary skills of community cooperation are gathered. As Bawden, Guijt, and Woodhill (2007) argue, reaching the goals of decision-making amidst conditions of uncertainty will primarily require a development of civic action and questioning of socially provided entitlements and values. Whilst education has always, at least in the West, been saddled with idealistic goals of raising conscious citizens ready to engage in democratic governance at multiple levels, the future biophysical challenges up the stakes by requiring citizens to be able to cooperate on pressing issues in which both stakes and uncertainty are high (Funtowicz & Ravetz, 2003).

The *Community cooperation* skills and values group mapped in this research includes the basic skills of democratic citizenship (participating in democratic decision-making: SV13) and evaluation of the public discourse (identifying stakeholders and their interests: SV12), but also an important skill of identifying and clarifying values (SV11) included in communication or information source. Finally there are the skills of negotiating and consensus building (SV14). This might be seen as a specifically civics-oriented skill so we may expect to find more examples of its actual curricular instantiation in those countries where the Phase B of the research included Citizenship Education or similar subjects. However, the specific skills named are applicable across the range of subjects, and a well integrated cross-curricular theme would find their instantiations even in the unexpected places such as Physical and Health Education, Mathematics or Arts. Within the European competence framework they are couched among the transversal key competence group Social and civic competences (European Parliament, & Council of the European Union, 2006). Whilst our *Community cooperation* skills group aims to go further than basic social and civic competence, just as the latter it can be successfully threaded through a wide range of curricular content beyond Social sciences and Civics. It should also extend beyond the knowledge component into words of work, voluntary action and civil society.

There is also a wholly different reason why community cooperation skills are important in the schools context. Aside from enabling students to be active

participants in communal activities, it also lays the foundation for a different form of learning, the very job of schools. As Wals (2010) argues in an inaugural lecture for a UNESCO Chair at Wageningen University, Netherlands, sustainability and Sustainable Development require a novel kind of expertise, the one of systemic thinking and multiple ways of knowing. This is different from the traditional initiation of students into individual or team-based analytical reduction of the real-world issues to small measurable models aiming at increased control and certainty. In that sense, Wals argues, Education for Sustainable Development, initiating youngsters into ‘science for societal relevance and sustainability’ requires a mix of traditional institutional learning and the novel community-based learning. The latter, whilst trying to achieve knowledge-creating and transmission through multiple stakeholders, ways of knowing and knowledge-forms, will rely on said skills of value and stakeholder identification and consensus building. The task of Education for Sustainable Development, lest we forget, is to help breaking away from the “routine thinking and stubborn unsustainable systems and practices” (Wals, 2010, p. 32).

### Humanistic values and democratic institutions: community cooperation prerequisites

This is another SV group that is among the least represented in all countries. In **Georgia**, once more, at first glance the representation of this group is almost as equal as that of the others, but that is largely due to the vagueness of the very general skills and values statements in a very general curriculum text. There is a similar situation in **Macedonia\*\***, although it is radically altered at the subject curriculum level in the case of Civic education and social subjects. In **England, Estonia, Slovenia** and **Croatia** it is a mid-range SV group according to representation (usually third in rank according to percentage of representation, standing at about 15% of all SV content in the framework curricula). In **Romania** it is still in third place, but below 10%, whilst in **Bosnia and Herzegovina** and **Kosovo\*** it is among the relatively least represented SV groups (in Kosovo\* it is the least represented SV group).

The **Georgian** framework curriculum contains many general phrases that are laudable examples of the general principles that education and development of young human beings should foster. These extol the virtues of community cooperation, but do not enter into the specifics of how to achieve it, other than *respect for oneself* and others in different social situations. All curricular areas contain examples of these general principles.

### Georgia: Framework curriculum

*To assist students in developing a humane worldview.*

*In today's dynamic, ethnically and culturally diverse world, it is very important for the functioning of society to be able to critique and defend cooperation.*

*To respect national and human values, freedom of the individual's upbringing, which could contribute to their formation and development of civil society.*

*A civic capacity - skills development, such as cooperation, freedom of choice, creativity, etc.*

*Compassion and ability to develop a tolerant attitude towards other people, to establish a different opinion.*

The selected subject specific proscriptions are even sparser in what they provide for *Community cooperation*, with additional very general requirements.

### Georgia: Subject curricula: Natural and Social sciences

*Develop a positive attitude to the environment.*

*Develop ability to solve problems of public concern.*

As in the case of **Georgia**, the **Macedonian** framework curriculum contains a lot of generally applicable principles of education, some of which touch upon good community cooperation without going into the details of the different skills development. In most of these cases, very broad and general statements combine many of our SV groups in one curricular entry, thus substantially raising the relative representation count of many of them. Likewise, the representation across the curricular areas is pretty balanced.

### Macedonia\*\*: Framework curriculum

*Creating favourable school climate, securing physical and psychological safety of pupils in the school.*

*Education about the respect of human rights and liberties and living in a democratic society through methods which support these values;*

*Learning about the history and cultural traditions of the Macedonian people and about the history and cultural traditions of other communities in the Republic of Macedonia as well as the traditions of the Republic of Macedonia;*

*Learning foreign languages for communication and learning about other cultures and achievements of other nations in the world;*

*Development of skills for recognition of own emotions and understanding the emotions of others.*

In **Macedonia\*\***, Phase B of the research explicitly included subjects such as the Civic Education and Society, where the relevant skills and values group, though present, did not take precedence over others. However, some good examples of inclusion of Community cooperation skills in the subject curricula are presented below, though there is still a lot of stress on strict nation-building, probably due to political and historical context. There are some explicit skills listings concerning *understanding of publicly available information* (stakeholders and their interests); *familiarity with basic democratic institutions* (but no participation in decision-making) and *fostering of tolerant cooperation as conflict resolution*. The transference of these skills into other subjects (such as natural sciences) where they could be combined with the factual instruction about the use of resources in economy and the global environmental change is not present, but is a clear next step that can be taken in aligning **Macedonian** curriculum with the goals of ESD.

#### **Macedonia\*\*:** Subject curricula: Knowing the nature, Society, Civic education

*Learn to advocate fairness and accountability.*

*Identify sources of information and assess their quality, understand the consequences of inaccurate information.*

*Be able to distinguish between authority and power without authority.*

*Know to identify cases of abuse of power.*

*Understand the meaning of life in a group and foster solidarity with others.*

*Reveal self as part of a group with own opportunities, ideas, needs, desires and respect others different ideas, opportunities, needs and*

*desires and get to know the meaning of the term socialisation, be familiar with certain factors of the socialisation and to understand their role and understand that joint efforts bring mutual results.*

*Understand the role of culture in local community life.*

*Perceive personal relationship with society through different ways of information sharing.*

*Recognise basic problems in the neighbourhood.*

*Be acquainted with the organisation of municipality work as local community and recognise the main authorities of the local community.*

*Know what it means to be a citizen as a member of the local community.*

Though only framework curriculum analysis is available in **England**, there are some clear examples of how *Community cooperation* skills and values can be included in the curricular areas outside Social Sciences. Interestingly, no explicit community cooperation skills were recorded in the Social Sciences section of the curriculum, whilst Citizenship education section ties the cooperation references to *global issues, inequalities, sustainability and use of resources*.

#### **England: Framework curriculum: Natural sciences, Arts, Humanities, Languages, Mathematics, Physical and Health Education**

*Collect and enter quantitative and qualitative information, checking its accuracy and analyse and evaluate information, judging its value, accuracy, plausibility and bias.*

*Understanding that texts from the English literary heritage have been influential and significant over time and exploring their meaning today.*

*Exploring how texts from different cultures and traditions influence values, assumptions and sense of identity.*

*Understanding how spoken and written languages evolve in response to changes in society and technology and how this process relates to identity and cultural diversity.*

*Engage with someone else's mathematical reasoning in the context of a problem or particular situation and consider the effectiveness of alternative strategies.*

In **Estonia**, the Arts and Humanities curricular area contains the greatest amount of the *Community cooperation* skills and values content, mainly due to focusing on cross-cultural communication and analysis of literary texts so as to uncover hidden values and interests. Other curricular areas aim to foster cooperative behaviour in approaching their specific subject matter. Some positive values that should be developed through compulsory education are explicitly listed.

### **Estonia: Framework curriculum**

*Acknowledging civil rights and obligations is connected to environmental issues.*

*Working in groups allows the students to gain valuable experience in mutual consideration, organisational skill development and resolution of potential conflict.*

*...appreciate values such as freedom, human dignity, equal treatment, integrity, regard for others, tolerance, responsibility, fairness and patriotism as well as respect for oneself, other people and the environment.*

*Religion Studies stress development of skills and values that are a basis for mutual understanding, respect, openness and readiness for a dialogue and co-operation.*

*... are able to form and express personal opinions and acknowledge and consider the opinions of others;*

*The subjects within the subject field support the formation of social competence by broadening the students' worldview and their concept of human relations and by developing their communicative competence (oral and written communication skills) by taking into account their communication partners, selecting proper ways of behaviour and skills in presenting and justifying their standpoints.*

*Discussion skills and skills in seeking, interpreting and using information are instrumental and are developed*

*Alongside communication competence, students are taught to compare the similarities and differences between their own and other cultures, to understand and value the uniqueness of other cultures and languages, to be tolerant and refrain from developing biased attitudes towards everything that is foreign.*

*Students learn to understand and accept different value systems based on cultural specifics.*

Beyond these recommendations in the framework curriculum, no further specific *Community cooperation* skills development units have been found in the selected subject curricula. The reason for this might lie in the curricular commitment to foster cooperation skills in a more implicit way through the learning environment and school culture rather than through explicit content instruction. This is interesting as Foreign Language and Literature are among the subjects surveyed, and in the framework curriculum they brought a lot of proscriptions relevant for the *Community cooperation* group.

Although the natural sciences section of the **Slovenian** framework curriculum contains the recommendations that scientific knowledge should be used in democratic deliberation, these are oriented at the secondary education segment of the curriculum which is not available to all students. Social Sciences are richer in the relevant content, but it again focused on the secondary education stage (examples below refer explicitly to universal primary education segments). Likewise, in the Civics section of the curriculum (most content loaded), though there is also relevant content on the universal compulsory education level the rest of it concerns subjects such as Philosophy and Environmental Education that are only available at secondary level. We include them here to indicate that content highly relevant to community cooperation exists within a section of compulsory education.

#### Slovenia: Subject curricula in post-differentiation secondary education

*Pupils/students should learn about alternative solutions to problems and be trained to exercise them in a democratic society.*

*Education for the environment stresses the importance of finding and implementing sustainable, environmentally sound solutions on the basis of different activities at various levels of participation of students in decision-making on important environmental issues, first in a local, then in a larger and global environment, [...] (individual and group behaviour in favour of sustainable development).*

#### Slovenia: Subject curricula in compulsory pre-differentiation education

*The learning process should enable learners to experience and acquire skills and experience, perception and evaluation of relationships between individuals, society and culture, and the natural environment.*

*Encourage students to actively conduct research and interpret events, links and problems of social, cultural and natural environment.*

*Develop the ability to create relatively complex and internally differentiated civic and moral judgments and foundation for moral conduct: a sense of responsibility for their own conduct and conduct of the community.*

Civics oriented subjects were not selected for Phase B of research in **Slovenia**, but the Society, Geography, Technology and My Environment subjects contain elements referring to *Community cooperation* skills. However, as the subject curricula in **Slovenia** are actually detailed content plans and are much less focused on the cross-curricular skills than the introductory framework content that served as the framework curriculum, there is not much to report on. The focus is on factual understanding of the human impact on the environment, and the skills of conflict resolution. Interestingly, even Geography with its invocation of ‘the future governors of the world’, does not enter into specific training about how those governors will cooperate on mutual goals.

### **Slovenia: Subject curriculum: Society**

*Learn about the modes of coordination between people of different interests and of conflict resolution.*

There is an admirable quantity of *Community cooperation* elements in the **Croatian** framework curriculum, despite a relatively low representation in relation to other skills and values groups, though the spread across the curricular areas is uneven. Areas of Natural Sciences, Social Sciences, and Languages take almost all the *Community cooperation* skills and values. In Natural Sciences they are focused mainly on the evidence-based, democratic management of resources and environment and in Social Sciences, on the social infrastructure behind cooperative resource management. The Languages area focuses on fostering values of humanitarianism and tolerance towards cultural differences. In all areas there is still a lot of focus on factual prerequisites of successful *Community cooperation* (such as the *evidence for the environmental impacts of human activities, forums for discussion of the future use of resources*) rather than on the development

of actual skills and values that participating in community cooperation requires. Where such examples exist they are mainly focused on the secondary education that is not universal (post-differentiation).

### **Croatia: Framework curriculum: Compulsory pre-differentiation education**

*Adopt an understanding for the values such as care, solidarity, justice, equality, love.*

*Recognise the importance of expressing respect for other people, and understating of their faith, worldview and values.*

*Name and discuss values that include the relationship of the individual to oneself, to others, to work, community, religion and culture.*

*Name and explain the basic concepts concerning personal and social wellbeing, conscience and ethical values.*

*Discuss values that promote sustainable development.*

*Acquire humanistic values such as friendship, cooperation, altruism and tolerance, and importance of active participation in matters important for the community.*

*With the aid of a discussant (teacher), and on occasions on their own, apply basic strategies for avoidance and/or resolution of misunderstandings, including recognition of stereotypes and prejudices.*

*Express belonging, togetherness, coexistence and tolerance through musical activity.*

*Learn to respect and nurture differences among people and use drama to come to know different ways of positive human interaction and non-violent conflict resolution, especially among peers.*

Again, the subjects focused on the Phase B (natural science and technology subjects) of the research were those where *Community cooperation* skills would not be traditionally expected. So they appear mainly as general principles of *tolerant cooperation and avoidance of conflict*, with some specific instruction on how to use technical group-work as *skill-building in cooperation*. On the factual side, the students are encouraged to familiarise themselves with *their own rights and responsibilities in their community*, as well as *those of other community members*. *On the values side, they are encouraged to value life in all forms and enjoy the beauty of nature.*

In the **Romanian** framework curriculum *Community cooperation* skills barely appear, but are evenly spread across curricular areas. They focus on the *fostering of group work and strengthening of self-respect in communal contexts*.

The subjects chosen for Phase B were predominantly natural science subjects, where community cooperation beyond group work is not traditionally represented, but even in History only a single relevant element was recorded: avoidance of violent conflict. There is relevant cognitive content such as that concerning universal human rights, rule of law and globalisation processes, but none of those are accompanied by recommended skills training. In Natural Science subjects students are encouraged to *assume responsibility and cooperation*, without further instructions.

Although the *Community cooperation* skills and values are among the least represented SV groups in the **Bosnia and Herzegovina** curriculum, there is actually a wealth of good examples of the factual prerequisites for developing these skills. These are mainly located in the Social Sciences and Arts and Languages sections of the framework curriculum, but invite the students to *learn to observe social and historical events from a multitude of perspectives*. This *multi-perspective approach is also fostered in the analysis of literary works and written communication*. There is a recommendation for avoidance of conflict rather than negotiating a non-violent conflict resolution.

#### **Bosnia and Herzegovina: Framework curriculum: Mother tongue–Literature**

*Through recognising different characteristics of literary characters the students will be guided through desirable and non-desirable behaviour of people in their environment, and developing caution in communication as a measure of prevention of possible negative experiences.*

On the level of subject curricula this does not translate to a systematic development of communication skills and even the relative representation drops, as the subject curricula are again mainly focused on the cognitive content. Stress is placed on how the community affects the individual, more than on how a multitude of individuals make a community. There are also references to expert leadership as required for communal development.

### Bosnia and Herzegovina: Subject curricula: Mother tongue and English language

*This is acceptable and this is not acceptable behaviour.*

*Only those with knowledge can influence the development of a community.*

*Describe a social environment in which the character lives and the ways in which it affects his/her behaviour and feelings.*

Although one of the participating countries with most recent experience of direct civic conflict, **Kosovo\*** framework contains very little in terms of *Community cooperation* skills. This might be due to the nature of the curricular text which focuses only on very general educational principles, and community cooperation was not seen as included in those. So students are only encouraged to *seek deeper understanding of themselves, other people and the environment.*

And although in Phase B the research focused on the Natural Science subjects, in the early grades of 'Nature and society' subject basic cooperation skills training could have been included. No examples of *Community cooperation* skills and values were recorded in the subject curricula analysed.

### Communities are nurtured not enjoined

Despite the double importance of *Community cooperation* skills for future sustainable development, universal primary education in the countries analysed trains for little more than respect for humanistic values. This is interesting as some of the countries participating in the research have experiences of recent conflict, and most are historically recent converts to Western style liberal democracy. Whilst the latter fact calls for repeated familiarisation with institutions of democratic societies (as some of our examples show), an opportunity for strengthening community-building, participation, community based problem-solving, and knowledge generation, is often not acted upon. Yet, across the board, we also find some good examples of values affirmation and skills building as important for community cooperation, and even more importantly outside the narrow band of Social Sciences and Civics curricular areas.

## Community cooperation outside Civics

*Engage with someone else's mathematical reasoning in the context of a problem or particular situation and consider the effectiveness of alternative strategies. (England)*

*Development of skills for recognition of own emotions and understanding the emotions of others. (Macedonia\*\*)*

*Express belonging, togetherness, coexistence and tolerance through musical activity. (Croatia)*

*Working in groups allows the students to gain valuable experience in mutual consideration, organisational skill development and resolution of potential conflict. (Estonia)*

Currently, most of the community cooperation training in most countries still focuses on the knowledge component, either by advocating which values the students should cherish or by listing the factual knowledge relevant to inclusion in contemporary liberal-democratic societies.

## Values recommendation:

*Adopt an understanding for the values such as care, solidarity, justice, equality, love. (Croatia)*

*Learn to advocate fairness and accountability. (Macedonia\*\*)*

*To assist students in developing a humane worldview. (Georgia)*

*...appreciate such values as freedom, human dignity, equal treatment, integrity, regard for others, tolerance, responsibility, fairness and patriotism as well as respect for oneself, other people and the environment. (Estonia)*

## Institutions of democracy

*Learn about one's own rights and responsibilities in their community. (Croatia)*

*Know to identify cases of abuse of power. (Macedonia\*\*)*

*Acknowledging civil rights and obligations is connected to environmental issues. (Estonia)*

Finally, there are also some clear encouragements for both cooperative approach to work and learning, and for conflict resolution. We also found examples of encouragement to apply the community cooperation skills fostered in school to wider social contexts.

### Community in school

*Exploring how texts from different cultures and traditions influence values, assumptions and sense of identity. (England)*

*Working in groups allows the students to gain valuable experience in mutual consideration, organisational skill development and resolution of potential conflict. (Estonia)*

*With the aid of a discussant (teacher), and on occasions on their own, apply basic strategies for avoidance and/or resolution of misunderstandings, including recognition of stereotypes and prejudices. (Croatia)*

*Seek deeper understanding of themselves, other people and the environment. (Kosovo\*)*

### Community outside school

*Develop an ability to solve problems of public concern. (Georgia)*

*Understand the meaning of life in a group and foster solidarity with others. (Macedonia\*\*)*

*Develop the ability to create relatively complex and internally differentiated civic and moral judgments and foundation for moral conduct: a sense of responsibility for their own conduct and conduct of the community. (Slovenia)*

*Strengthening of self-respect in communal contexts. (Romania)*

*Describe a social environment in which the [literary] character lives and the ways in which it affects his/her behaviour and feelings. (Bosnia and Herzegovina)*

### 5.3 Rote and process learning

*...communities and nations hope to make progress towards sustainability goals, they must focus on knowledge, skills, values, and perspectives that encourage and support public participation and community decision-making. To achieve this, basic education must be reoriented to address sustainability and expanded to include critical-thinking skills, skills to organize and interpret data and information, and skills to formulate questions. Basic education must also include the ability to analyze issues that confront communities and should enable individuals to make lifestyle choices that do not erode the natural resource base or impinge on the social equity and justice of their neighbours. (UNESCO, Section for Education for Sustainable Development, 2005, p. 29)*

“Imagine you were Ministers of the Environment...”  
(Georgia, textbook)

In schools, this aim can be reached through an active involvement of the students in the learning process. Critical thinking, interpreting data and information, analysing issues can be done by giving the students task-solving exercises (and not by expecting them to simply memorise information).

Process learning tasks – are such tasks that encourage learners to actively process the information and support understanding of meaning rather than memorisation and integrating the information to own experience. Rote learning tasks - are tasks that focus on memorisation rather than on understanding. The major practice involved in rote learning is learning by repetition.

Process tasks are the key for the students to be the “owners” of their knowledge, to be able to use them in various situations; process tasks are the key to pull information out from the incarceration of the fixed form of their presentation in the textbook. We don’t say that the rote learning is bad, or that it is not useful. When we memorise a poem, a telephone number, an address, we use “mechanic” memorisation. But if we’re aiming to keep the information for a long time, we have to work actively with it.

Let’s look at some data from our research. Analysing the textbooks we find interesting aspects. In the first place, the majority of the tasks related to SD from the textbooks analysed (3 for each country) are process tasks.

- In **Croatia**: Geography (6th grade) almost half of all tasks are processes (24), and 20 are rote learning tasks; Nature, sixth grade, 23 process tasks, 4 rote learning; nature and Society, fourth grade, 23 process tasks, 5 rote learning tasks.
- In **Macedonia\*\*** there are all SD tasks related as process tasks in Nature fourth grade; and in Civic Education, eighth grade, and Society, grade 4, most of tasks are process tasks.
- In **Georgia**, in Nature, fifth grade, we have all SD tasks as process tasks; in Civic Education and History, ninth grade, the majority of SD tasks are process tasks.
- **Kosovo\*** has in M an and Nature, third grade, most of the SD tasks as process tasks; in Physics ninth grade we have 1 rote learning task and 9 process tasks.
- **Slovenia** has in Natural Sciences and Engineering, fifth grade, 78 cases of process tasks and 1 case of rote learning task. In "I live in Slovenia, Geography for ninth grade" we have 26 process tasks and 28 rote learning tasks, so almost half of SD related tasks are process.
- In **Estonian** textbooks, in Nature fourth grade we have 8 process tasks and 7 rote learning tasks; in Natural Sciences sixth grade we find 39 process tasks and 8 rote learning tasks; in Technology for boys, ninth grade, we have one process task and none rote learning task.
- In **Romania**, we have in Natural Sciences fourth grade, 21 process tasks and 6 rote learning tasks; in Geography grade 5 we have 15 process tasks and 18 rote learning tasks; in Physics eighth grade we have 4 process tasks and 6 rote learning tasks.

The conclusion for the above survey is that **ESD is motivating and it is a fertile ground for active engagement of students**. The vast majority of tasks related with Sustainable Development are process tasks and this shows us the engaging character of ESD as part of a wider form of education, the education as a living being, as human, as person, as citizen and as a responsible and conscientious member of society.

We have said that ESD motivates process tasks, but it also invites to creativity. Here are some examples of interesting process tasks:

*Imagine that you are ministers of environment protection and prepare a law on protection of water (Georgia, Nature, grade 5).*

*Students are asked to write an augmented essay on whether or not the media should be free of political and commercial influence (Georgia, Civic Education, grade 9).*

*Students are asked to recall what stones/rocks do they know, what can be found near their homes, what the Estonians have been used to construe buildings (Estonia, Natural Science, grade 4).*

*Students are asked to research what is the economic activity like in mountainous parts of Croatia (Croatia, Nature and Society, grade 4).*

*Students opinion on if there are specific “man” and “woman” activities (Macedonia\*\*, Society, grade 4).*

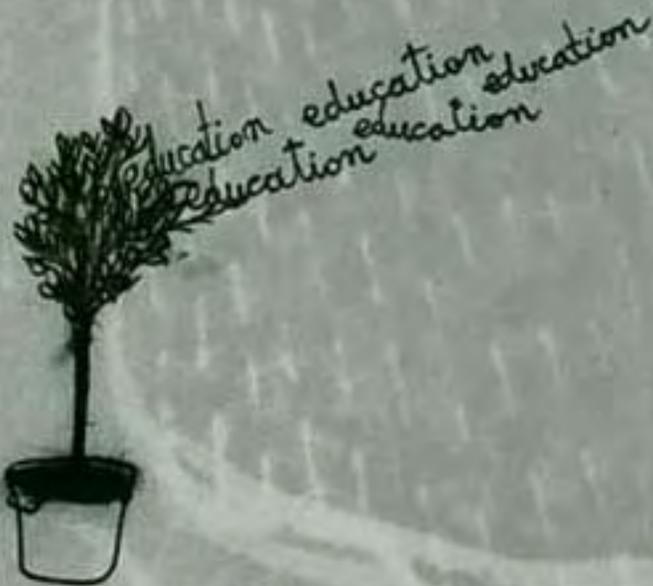
*Students measure the number of vehicles (cars, busses, trucks, motorbikes, bicycles) on three streets during period of 15 minutes. After this, students should calculate the number of non-pollution means of transportation (Macedonia\*\*, Society, grade 4).*

We believe that ESD has many formative resources and it represents an important educational asset, which must be more present in the national curricula all over Europe.



## Chapter 6

*Concluding remarks*





## 6. Concluding remarks

A diverse set of countries such as is included in this cannot be easily submitted to standardised summary as might be expected here. It is again worth stressing that the study did not operate with some ideal and universally applicable ESD curriculum for compulsory formal schooling against which all the curricula in the participating countries could be measured. We were also keen not to focus only on simple quantitative comparisons of relative insertion of SD keywords into national curricula, and would urge the readers to take time to study qualitative examples of peculiar ESD-appropriate content within and across countries. We must also again remind of the “intellectual challenge at a conceptual level” concerning both ESD and national and international SD policies, as well as the interconnection between education and development agendas in these fields (Gough & Scott, 2001, p. 1). We thus combine warnings, seemingly external to field of education, of **deteriorating ecosystem ‘services’ that support life** (Hassan, Scholes, & Ash, 2005) and **growing risk of social exclusion in post-transitional European countries** (UNDP, 2011a), with calls to **empower people to make sustainable choices** by, among other things, **advancing education for sustainable development (ESD)** (United Nations Secretary-General’s High-level Panel on Global Sustainability, 2012).

In this we start with a simple question, the baseline of our study: **is there any ESD in our countries, and if there is what is it like?** A most concise answer to this question is: **there is content in our formal educational systems that corresponds to ESD requirements**, and it is mostly about **socio-cultural elements** of ESD (see Annex 1). However the study tells us much more and it points us in the direction of further exploration and research.

To begin with, if orientation on sustainable development (for reasons of environmental survival, global solidarity and societal cohesion) is to be the developmental orientation of the societies in our region, then **ESD should be one of the foundational principles of compulsory education** – curricula and practices. **Currently it is not.** Even in those countries where it is explicitly named as one of the goals of education, this remains an abstract ideal mostly distant from instructions for daily classroom practice.

On the other hand, **a lot of ESD-relevant content is already present in different level curricula** (from national frameworks to different subject-grade

combinations), but it is not shaped into a broader ESD agenda. Sustainable Development (SD) is, on the whole, not a fixed destination to be reached in a set amount of time, but an ever-present process of adaptation, learning and action. As such it requires a factual knowledge foundation, but also skills training and values orientation to be developed through overall schooling practice and maintained well-beyond classroom. On the other hand, it requires a re-orientation of the current dominant practices and ways of life, that rely on education to build relevant skills-base and enable all of society to participate in addressing challenges as well as benefiting from opportunities. That is why a broad schooling ESD agenda is needed, rather than addition of new facts and figures to the existing schooling practices.

But, our study indicates, most of the required curricular content is already there (though in widely varying degrees and forms across participating countries, as figures and data-tables above illustrate). This indicates that **what is required is to distribute it more evenly, connect and frame it in accordance with the overall ESD foundations and agenda**. There is **no immediate need for introduction of a new subject** into already burdened school time-tables, **nor development of new documents introducing cross-curricular content**. In some countries, though, additional content-elements across the curriculum framework are called for and those are from categories of economic and environmental components of ESD. In most countries **education for individual empowerment, action and responsibility needs strengthening**, in order to help students as future citizens to become engaged in shaping sustainability in the future.

One may wonder why education, and more importantly basic compulsory education, should be burdened with urgent and global issues such as societal reorientation to sustainable development. Because education, through national educational systems in particular, plays a role both in perpetuating current unsustainable practices and in socializing individuals into a community of political citizens. It is by no means the only factor in this, but it is a factor that cannot be left out. The point is not that education should alone achieve the change called for, but that given its importance in an individual's life it would be irresponsible to leave it out of the process of change. **Education already plays a role in shaping the students understanding of the interaction between society and environment** (cf. Organisation for Economic Co-operation and Development [OECD] (2009) reports on source of information about

environmental issues), in shaping their understating of the nature of economic segment of this interaction, and in laying the foundation of their understanding of the role of the political in implementation of different socio-environmental futures.

It is also possible to claim that there is an urgent threat of global environmental change and that the global community has to respond to this threat through a combination of understanding of the material environment and its interaction with the human population, but to deny that education of youths as future citizens, and their construction as individuals contributing to socio-economic activities and political processes, plays a crucial role in the social action and transformation required today not tomorrow. One may claim that education systems' role in the whole mess is just too small to be really worth discussing. The action is needed now and it is needed from the socio-economic elites, not the down-to-earth mind-my-own-business citizens of tomorrow's European (or any other region's) states. And these are largely whom the national educational systems are addressing today.

Whilst we were aware from the outset of this research that action is needed from the socio-economic elites today, determining the "socio-metabolic flows, networks, configurations and dynamics" (Swyngedouw, 2007, p. 36) is a permanent task of societies present and future. Sustainable development, as explicated above, is not a fixed destination to be reached at a given date and then considered completed. The threat of current radical environmental change is not a chance hazard appearing at this point in time, to be overcome and forgotten, but a product of societal (elite-driven, but garden-enabled) practices past and present. That is why it is of relevance to future citizens, and possibly, based on the decisions and actions of today, saddles them with adapting to its consequences and mitigating its causes. And just as with respect for communal norms, strife for peace, maintenance of health and pursuit of wellbeing, or any other education-affected (and sometimes instilled) aspect of individual's life, **educational systems must play a role (however hard to measure) in contributing to emergent communal actions through individual behaviour and attitudes.**

This is why, in the end, we must **warn against our curricula being focused on understanding without engagement**, why we must **recommend that they strive, beyond the measurable inclusion of laudable content, to "connect the head, heart and hand"** (Daniella Tilbury, private communication

to Asja Korbar, January 23rd, 2012). Sustainable development fostered through education requires that our formal educational systems educate for not just about. We direct the reader to Section 5.2 presenting and evaluating development of ESD-specific skills and abilities (for example managing change and dealing with uncertainty, cf. also Gough and Scott, 2001), fledgling roots of which we found in the existing curricula. **Economic content of the curricula is also currently not oriented on sustainability** (through content such as corporate social responsibility and accountability gaining increasing importance in our region, market economics' drawbacks as well as advantages and the like), whilst global sustainability initiatives call for nothing less than **transformation of the global economy**, for which "tinkering on the margins will not do the job" (United Nations Secretary-General's High-level Panel on Global Sustainability, 2012, p. 7).

Finally, we understand that **curricular innovation is only the first step** in educational transformation, and that a **realistic ESD requires appropriate teaching and classroom practices**, an urgent next step for our initiative based on the experiences and evidence gathered through this study. In a nutshell, ESD is motivating and fertile ground for active engagement of teachers and students. The vast majority of school-tasks related to SD are process tasks, an engaging educational content that is part of deliberate transmission of our knowledge and practices as humans, as persons, as citizens and as responsible and conscientious members of a society.

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## Annex 1: Coding Matrix

		Description
<b>I</b>	<b>COGNITIVE CONTENT</b>	
<b>A</b>	<b>Social Cultural elements</b>	
1	Human rights	Civil and political rights, economic; social and cultural rights; environmental rights (right for clean environment) is currently debated
2	Peace and human security	References to benefits and mechanisms of global peace, and securing "freedom from want" and "freedom from fear" for all persons.
3	Gender equality	In employment, career and salary; in political and social rights
4	Cultural diversity and intercultural understanding	Tolerance to other values and perceptions
5	Health	Human health, health problems, environmental health, ageing
6	New forms of governance	New ways to manage governing of goods and communities, e.g. environmental governance (environmental aspects considered in decision making); democratic decision making (transparent, involving stakeholders).
<b>B</b>	<b>Environmental elements</b>	
1	Natural resources	Minerals, forest, land, soil etc (amount, location, quality)
2	Water	Fresh water, marine water, drinking water (location, quality)
3	Air	Ambient air (quality)
4	Soil	Agricultural soil, forest soil (quality); soil erosion processes
5	Energy	Fossil fuel-based energy, renewable energy (resources, dependence on these sources)
6	Agriculture	Role of agriculture (food, employment); position of agriculture within a wider economics system; forms of agriculture (industrial, small scale, organic, sustainable etc.)
7	Biodiversity	Species and habitats (ecosystems) - diversity, quality, loss

		Description
8	Climate change	Global phenomenon; reasons and actions (mitigation, adaptation)
9	Rural development	Villages, communities - role, age ratio, employment; position within wider society, economic base
10	Urbanisation (urban footprint; urban sprawl)	Cities/towns - size, population, dynamics, city planning, inc transport planning; impact on the landscape and wider environment; quality of life
11	Natural disasters	e.g. floods, droughts, volcano eruptions, tsunamis, extreme weather events
12	Pollution	Air pollution, water pollution, soil pollution; chemical, biological, physical; systemic or accidental
13	Human beings (as living organisms)	Anatomy and physiology of human being as a living organism; human being as a one of the living organisms in ecosystem/biosphere
14	Waste	Solid waste, liquid waste, waste management; recycling
<b>C</b>	<b>Economic elements</b>	
1	Poverty	Population living below average living standards; sanitation problems, food shortage, health care deficiency, availability of education; relation to natural resources and economics
2	Planetary boundaries	Planet Earth has limited resources for human consumption and emission mitigation (or absorption back into biological cycle).
3	Corporate social responsibility and accountability	Companies work out and implement certain plans on responsible resource use, a positive impact through its activities on the environment, consumers, employees, communities, stakeholders and all other members of the public sphere.
4	Market economy	An economic model; its role in today's global society
5	Production and/or consumption	Elements of contemporary market economy, role of companies, role of customers; cultural effects, environmental effects, examples from students' everyday life.

		Description
6	Sustainability, sustainable development	Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
II	<b>SKILLS AND VALUES CONTENT</b>	
1	Acting with responsibility locally and globally	
2	Acting with respect to others	In this case 'others' may include other people, other communities (anthropocentric) or other beings (biocentric).
3	Critical reflective thinking	
4	Understanding complexity / applying systemic thinking	Understanding how things influence one another within a whole, for example in ecosystems where air, water, movement, plants and animals combine to a complex effect.
5	Futures thinking	Developing reasoning about possible, probable and preferable futures, understanding worldviews and myths that underlie them. Most clearly evident in projecting from study of history into what is likely to continue, what is likely to change and what is entirely novel. Based on spotting patterns in past and present.
6	Planning and managing change	
7	Understanding interrelationships across disciplines	Being taught how topics and processes from different scientific and artistic disciplines and subjects overlap, how individual issues may be viewed from several disciplines, e.g. physics and economics.
8	Applying learning in a variety of life-wide contents	Being instructed in how to apply the curricular knowledge in everyday life, but also basic pedagogic instructions how to learn from everyday situations (trial and error heuristic).
9	Decision-making, including in uncertain situations	Being taught about the process of decision making, individually, within groups and whole societies. Developing a skill of decision making in situations where there is no predetermined right outcome.

		Description
10	Dealing with crisis and risks	Learning about responses to crises and about assessing various risks in the environment. Training in managing one's own response to crises.
11	Ability to identify and clarify values	Developing skills in clarifying one's own and others' values, as well as identifying values that lie behind attitudes and statements.
12	Identifying stakeholders and their interests	Being able to discern who stands behind certain statements and attitudes and what their interests might be. Also being able to observe an issue from the multiple perspectives of different stakeholders and their interests in it.
13	Participation in democratic decision-making	Access to information, participation in decision making (on plans and permits), access to justice
14	Negotiating and consensus building	Resolving conflicts (for example)
15	Observing -qualitative	Part of basic science process skills: providing descriptions of the object of interest based on information gathering using one's senses.
16	Measuring - quantitative	Part of basic science process skills: using standard measures or estimations to describe specific dimensions of objects of interest.
17	Inferring - based on observation	Part of basic science process skills: formulating assumptions or possible explanations based upon observations.
18	Classifying	Part of basic science process skills: grouping or ordering objects or events into categories based upon characteristics or defined criteria.
19	Predicting	Part of basic science process skills: guessing the most likely outcome of a future event based upon a pattern of evidence.
20	Communication and understanding graphs and symbols	Part of basic science process skills: using age-appropriate scientific and mathematical symbolic language and graphs.
21	Manipulating mathematical ratios	Mathematical ratios (including equations and inequalities) are representation of relationships which in turn indicate dependency. Dependency concerns the fact that properties and changes of certain mathematical objects may depend on or influence properties and changes of other mathematical objects.

## Annex 2: Frequency table Phase A of research

	Croatia	Bosnia and Herzegovina	Estonia	Georgia	England	Kosovo*	Romania	Slovenia	Macedonia**
A1	13	2	11	9	8	11	2	1	7
A2	17	4	12	10	5	7	0	0	5
A3	5	2	1	0	4	0	0	1	7
A4	80	66	34	9	22	9	6	5	11
A5	23	36	41	7	7	0	0	3	6
A6	2	4	5	13	4	2	0	7	6
<b>TOTAL A</b>	<b>140</b>	<b>114</b>	<b>104</b>	<b>48</b>	<b>50</b>	<b>29</b>	<b>8</b>	<b>17</b>	<b>42</b>
B1	22	20	7	0	5	1	2	13	5
B2	10	10	0	0	0	1	0	2	4
B3	4	6	0	0	0	0	0	2	4
B4	4	12	0	0	0	0	0	1	3
B5	25	9	0	0	2	0	1	3	5
B6	6	2	0	0	1	0	0	1	0
B7	29	24	5	1	5	8	1	10	2
B8	4	2	3	1	4	1	1	1	4
B9	0	5	2	0	1	0	0	1	5
B10	0	6	3	0	3	6	0	1	5
B11	3	3	3	1	0	0	1	0	1
B12	8	5	3	1	2	2	0	4	5
B13	14	2	11	1	3	8	0	14	8
B14	11	5	3	0	1	0	0	1	3
<b>TOTAL B</b>	<b>140</b>	<b>111</b>	<b>40</b>	<b>5</b>	<b>27</b>	<b>27</b>	<b>6</b>	<b>54</b>	<b>54</b>
C1	6	9	1	2	3	2	1	0	5
C2	6	7	1	2	4	4	1	6	1
C3	0	6	0	5	1	2	0	1	9
C4	5	8	1	1	2	0	2	4	3
C5	16	3	5	4	12	1	1	1	8
C6	12	63	46	7	4	20	0	20	12
<b>TOTAL C</b>	<b>45</b>	<b>96</b>	<b>54</b>	<b>21</b>	<b>26</b>	<b>29</b>	<b>5</b>	<b>32</b>	<b>38</b>

## Annex 3: Summary of the national conclusions and recommendations<sup>7</sup>

### Summary of recommendations

This summary relies on the **National Reports** (cf. Figure 2) where we find a sum of recommendations that draw attention to changes that should be made in order to improve SD presence in the curricula, and on the results of the consequent **Policy Lab** Enjoined event which aimed to derive concrete educational policy recommendations beyond the level of the curriculum.

The Central Research Team (CRT) tried to combine these two sources into providing a summary of recommendations generated so far that could help in improving Education for Sustainability in the region.

We approached the recommendations by first dividing them into General and thematic. Then further dividing the thematic into six specific themes, and finally outlining which of the options were best suited for the Enjoined initiative to work on as its next common steps of action.

### GENERAL

**The need to reconsider overall understanding of SD in curricula.** Often SD definition is concentrating on environmental issues, environment protection or knowledge, and environment cognizance. The economic and social aspects are ignored or they are not known at all.

*“ESD should be understood in a wider context (more like global education, as example from recent public debates), with all the three components evenly accentuated: economy, environment, society. Thus, not to be understood as environmental education only” (Gobbo, 2011, p. 34).*

*“On the other hand, when taking a closer look at the issue, it appears that the concept adopted here does not always follow the comprehensive and balanced ESD approach. To begin with, the cross-curricular topic named “Environment and sustainable development” reveals a mixed picture – for it demonstrates that the authors of the curriculum have not understood the concept of ESD correctly. Environment forms an integral part of ESD not something separate from ESD. Furthermore, the available ESD network of organisations and activities tends to focus mainly on environment issues rather than addressing the whole concept of ESD” (Aria, Kirss, & Peterson, 2011, p. 39).*

<sup>7</sup>This section does not include England as it is not a member of the Enjoined network and there is no corresponding National Report.

Likewise, the Romanian National Report states that the three cognitive content components of sustainable development education are differently covered, the environment having the largest share. “Perhaps this situation can be explained by the mistaken belief that environmental problems are equivalent to a much broader theme, the [whole of] sustainable development” (Dumitru & Stoenescu, 2011, p. 27).

## THEMATIC

### I) Curriculum level

Considering that the research primarily consisted of curriculum research it is not surprising that a high number of recommendations found in the National Reports are focused on it. These stretch from Recommendations to review and/or reframe the existing curricular content, in order to update the out of date content and include new content. Some suggest introducing new subjects that could be core, elective or non-obligatory while others suggest introducing ESD as a cross curricular theme. The suggestions for improving, updating or adding content in different countries depend not only on the findings of the research but also on the concrete situation in the country and the priorities of the particular country. Therefore the examples below could not be taken to be of same value and importance in all countries.

#### a) More different ESD elements should be introduced into the curricula:

*“**Economic aspects** of education for sustainable development, in general, is not mentioned in the early stages of education. Children should be informed early on this aspect and they should be included in the curricula”* (Bratović, Lepić, & Kadić, 2011, p. 28).

*“The share of **economic aspects** of ESD should be substantially increased both in curricular documents and textbooks”* (Bregvadze, 2011, p. 25).

*“there are clear gaps in content (novel sustainability oriented topics such as **forms of governance or urbanisation trends**)”* (Bajkuša, Juričić, Petković, & Rogić, 2011, p. 27).

*“[The Curriculum] provides very little emphasis on **gender equality** as in a traditional society such as the Croatian [one this] could mean a further perpetuation*

*of gender and gender roles, and maintain existing levels of hostility towards gender and sexual minorities” (Bajkuša, Juričić, Petković, & Rogić, 2011, p. 28).*

*“...social component and even more the economy component were neglected” (Gobbo, 2011, p. 35).*

*“Developing and enhancing knowledge and awareness of youngsters on environmental and energy issues is crucial to sustainable socio-economic development.” (Kabashi-Hima, 2011, p. 32).*

**b) An improved presence of existing ESD content, more explicitly present in educational goals, principles and documents**

*“In the Framework and Subject curricula creation or revision, it is necessary to take into consideration the sustainable development principles” (Bratović, Lepić, & Kadić, 2011, p. 35).*

*“Framework Curriculum and Subject Curricula revised to incorporate sustainable development in the goals and objectives more explicitly across all curricular areas” (Georgieva et al., 2011, p. 35).*

*“... the cross-curricular topic named “Environment and sustainable development” reveals a mixed picture – for it demonstrates that the authors of the curriculum have not understood the concept of ESD correctly” (Aria, Kirss, & Peterson, 2011, p. 39).*

*“Developing the national curriculum [...] can be achieved by including sustainable development education specific components in the national curriculum. The current national curriculum is already obsolete and reflects a certain context, so a new one it is a priority” (Dumitru & Stoenescu, 2011, p. 27).*

**c) A cross-curricular engagement of SD, deeper and extensive, comprising more areas and subjects**

This describes a need for a “real” curricular integration of SD, not only a formal and desired one. Apparently this kind of integration is missing from most of the countries and is observed in Estonia also, where we know that ESD is the best represented in comparison with all the other countries under research.

The cross-curricular sustainable development implementation the most recommended action in all countries:

*"We recommend to include the present cross-curricular subject even more into the curricula and learning material"* (Gobbo, 2011, p. 35).

*"Framework Curriculum and Subject Curricula revised to incorporate sustainable development in the goals and objectives more explicitly across all curricular areas. [...] More integrative cross curriculum ESD topics introduced that would lead pupils see "the big picture", interdependence and interaction of different SD elements in global terms so that they can take actions in synergy with efforts made on global level or initiate activities that correct issues globally"* (Georgieva et al., 2011, pp. 35-36).

## II) School level

The National reports were based on the curricular content research, and since the focus of research was not on ESD practices in schools it is not surprising that the recommendations in the National Reports do not focus on school-level recommendations. However, in the consequent Policy Lab event where the members of the initiative together with representatives of the policy makers were asked to derive possible solutions, a lot of the discussion and conclusion were aimed at school level. These were on: **Reviewing and/or reframing of the existing content of the school curricula** – influencing the school curricula; **introducing extra-curricular activities on ESD**, with the special focus on practical, outdoor ESD activities; **introducing ESD practices in schools and benchmarking of 'SD-ness' of the school; exchange of know-how and practices between schools** (pairing); **ESD as part of school development plans**.

## III) Textbooks

A small number of selected textbooks were reviewed and the findings were presented in the National Reports. The most general finding was that the **textbooks were in many ways better than the curriculum** itself. It has to be noted, however, that the selected books were selected on the basis that there was a lot of ESD content in them based on the subject

and grade level analysis conducted in the preceding stage (Phase B) of the research.

The recommendations on the textbooks included reviewing and editing the textbooks and an obvious need to update some of the content. While there was also a suggestion that **in some countries there is a need to train textbook authors in ESD principles.**

Many reports state that the link between curriculum desires and their embodiment in the textbooks is thin and sometimes broken. So an effort from the teachers is needed to put sustainable development into children's hands. National teams suggest many concrete examples of what should be put into the textbooks, because the textbook content is more directly framed and their adjustments must be concrete. For example, Macedonian report says: "Broader content advancing values and futures thinking [should be] incorporated in the textbooks" or "Examples of good practices as seen in the Life Based Skills Education and Environmental Education used broadly in textbooks and workbooks" (Georgieva et al., 2011, p. 36).

But there are general statements concerning all textbooks, like in the Slovenian report: "SD should not be included as an additional subject and/or an additional topic in [the curriculum, text- and task-books]" (Gobbo, 2011, p. 35).

#### **IV) Teacher Training for ESD competences**

Knowing that teachers are the main force of change in any educational reform, Education for Sustainability included, the Policy Lab discussion revolved considerably on the need for teacher training on ESD at both in-service and pre-service levels. As a short term measure there was a suggestion that mobility programmes and study-visit programs could provide a fast track for medium level impact change.

#### **V) Raising awareness**

As was clear from the curriculum research but also from all the initiatives' activities, understanding of SD and ESD in the region is still at a rather low level. There was, therefore, a perceived need for raising awareness of all educational stake holders concerning the importance and value of ESD. The methods

suggested during policy lab for this were:

- building CSO coalitions (national/regional/international) for ESD advocacy;
- achieving relationship and working with public authorities – to include them in CSO work.
- involving communities in the process
- preparing ESD campaigns and lobbying.

## **VI) Do more research**

The research conducted was limited in many ways and could not provide a full picture of Education for Sustainability status in the region. A large missing piece in the puzzle uncovered so far is the existence or non-existence of ESD-related practices. There is also the issue of students' and teachers' knowledge and understanding of ESD, and a comprehensive research of the textbooks in use. There is no doubt that further research could build on the pool of knowledge and help better focus the measures already taken. None of it, though precludes acting on the existing recommendations (cf. groups I-V above) based on the findings collected through the initiative in 2011.

## **NEXT Steps for ENjoinED**

Curriculum review or design is a long process that encompasses many levels. ENjoinED initiative should aim to advocate for the changes and provide evidence on gaps in the curriculum, but should not place all its energy and efforts into this area of recommendations given its limited power and resources.

On School level the initiative might have some success with helping schools develop their School development plans and school curricula based on ESD principles. CSO initiative is also well placed to provide or coordinate extracurricular activities offered at schools.

As the Initiative itself is developing a module for in-service teacher training on ESD this seems to be one of the aspects where the Initiative might be able to do most and should focus its currently available efforts and resources into tailoring such training to different national systems' needs.

As a CSO Initiative raising awareness and campaigning for change and better understanding is in our core business and we should continue to do this and act as a nexus for sharing knowledge where there are appropriate gaps in public discourse.

This can be achieved not only through campaigns but also through publications that will help better understanding of issues and link academic analyses with public concerns.

Research has and will continue to be our tool for providing policy makers with evidence and for pushing our agenda. Although a number of possible lines of research were suggested it might be wise to concentrate the Initiative's efforts on monitoring school practices concerning ESD. Such action-based research automatically provides work with teachers and students and allows for research that has immediate effect at school level, whilst making education a more viable subject-matter than top-down curricular proscriptions.

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## Organisations participating in the research

### Network of Education Policy Centers (NEPC)

NEPC is an international non-governmental membership organization of education policy centers. It currently gathers 23 institutional members in 20 countries. It promotes flexible, participatory, evidence-based, transparent education policies embedding open society values through research, policy analyses, advocacy and implementation. It coordinates as well as initiates multi-country projects of its members, provides policy guidance and learning opportunities to educational stakeholders in the region where it operates.

[www.edupolicy.net](http://www.edupolicy.net)

### Centre for Educational Research and Development Institute for Social Research in Zagreb – Croatia

CERD is a research unit within the Institute for Social Research in Zagreb. It carries out fundamental, applied and developmental interdisciplinary research, as well as educational activities which aim to develop the educational sciences and the education system. The Centre's mission is realized through the systematic professional development of its research staff who are focused on developing their expertise in different areas of the educational sciences, trained for interdisciplinary teamwork and committed to the development of partnership relations with key education stakeholders in Croatia and abroad.

[www.idi.hr/cerd](http://www.idi.hr/cerd)

### Focus, društvo za sonaraven razvoj – Slovenia

Focus, association for sustainable development

Focus, association for sustainable development is an independent, non-governmental and non-profit environmental organisation. We are working on the field of climate change. With our work and deeds we want to demonstrate, that each of us can be environmentally and socially responsible.

Our work focusses on the following topics: climate change, energy (renewable sources, efficiency), sustainable mobility, global responsibility and consumption. The work is being done on different levels: policy work, education, awareness raising, advocacy.

[www.focus.si](http://www.focus.si)

## Forum for Freedom in Education – Croatia

Forum for Freedom in Education is a non-governmental, non-profit organisation, which has been active in Croatia since 1992 and was registered in 1998. The main goal of Forum is to introduce the educational standards of the contemporary democratic society into the Croatian education system. Main activities of the Forum include creating and implementing education programs for methodological training of the teaching professionals, non-violent conflict resolution, health education, civic education, student scholarships, and training in the field of methodology of teaching.

[www.fso.hr](http://www.fso.hr)

Special thanks to the Forum for Freedom in Education volunteers Andrea Petković, Valentina Juričić and Divna Rogić for enormous help in doing textbook analysis. Thanks to Mladen Domazet and Aleksandra Schindler for valuable comments and suggestions.

## Foundation Center Education 2000+ – Romania

Center Education 2000+ is a non-governmental, apolitical and independent organization offering educational consultancy. The Center - founded in December 1999 - is part of the Soros Open Network.

The programs and the expertise of Center Education 2000+ have benefited, along the years, large groups of students, teachers and other educational consultancy specialists. Its contribution to the development of current education reform practices is reflected in educational change models implemented at present in Romania and various other countries from Central and Eastern Europe.

As for the professional standards and institutional procedures, Center Education 2000+ is a think tank, task-oriented and learning organization. The Center sets priorities and selects the activity fields for its projects and services based on the concrete needs of its clients and on the requirements of the national and international educational market.

[www.cedu.ro](http://www.cedu.ro)

Special thanks to Petre Sorin Coman

## International Institute for Education Policy, Planning and Management – Georgia

The mission of the Institute is to contribute to both sustainable development of educational reform that would be consistent with the principles of an open society and positive changes in the Georgian education system and

to support stakeholders participating in the education system. The goals of the Institute are to contribute to: Developing a modern, competitive education system in Georgia; Systemic democratization of the education system, developing an appropriate legal framework and initiating positive systemic changes; Preparing the public for acceptance of the educational reform; Democratization of relationships between various stakeholders of the educational process and improvement of the management quality, within the education system.

<http://www.eppm.org.ge>

### **Kosova Education Center – Kosovo\***

Kosova Education Center (KEC) is a non-governmental and non-profitable organization established in 2000 by Soros Foundation. KEC is mainly focused in training of school staff in relation to the new teaching methodologies and leadership. Additionally KEC is active in other areas that support the advancement of the quality of education in Kosovo.

[www.kec-ks.org](http://www.kec-ks.org)

### **Macedonian Civic Education Center – Macedonia\*\***

Macedonian Civic Education Center (MCEC) was established in 2004 with mission to develop educational programs and provide services to education and other public institutions, local communities, non-governmental sector, business sector and citizens in order to contribute to the continuous development of the civil society. Currently MCEC has 17 full time employees. MCEC activities are focused on: pioneering quality school-based assessment to improve teaching and learning; improving teachers' skills in mathematics, languages, natural sciences and information technology; strengthening the capacities of school boards and school management; supporting decentralization of education, organizing discussions for students through improving skills for civic participation, increasing the confidence among youth in multiethnic cooperation; preparing creative training materials; conducting baseline surveys, researches and evaluations.

[www.mcgo.org.mk](http://www.mcgo.org.mk)

### **Praxis Center for Policy Studies - Estonia**

Praxis is an independent non-profit think tank in Estonia. The mission of Praxis is to improve and contribute to the policy-making process in Estonia by

conducting independent research, providing strategic counsel to policy makers and fostering public debate.

[www.praxis.ee](http://www.praxis.ee)

We would like to extend our gratitude to the Ministry of Education and Research for making the translations of the national curriculum available to us.

### **proMENTE, social research - Bosnia and Herzegovina**

proMENTE provides social research solutions to both businesses and non-profits. proMENTE operates internationally and is based in Sarajevo. The organisation was registered as an association with the Federation of Bosnia-Herzegovina in October 2002 by three social scientists.

proMENTE mission is to assist individuals and organisations to achieve their full potential – by providing research and evaluation services as well as evidence-based advice and training. proMENTE offers expertise in a wide range of social issues: poverty and employment, volunteering, child protection, social inclusion, and in the field of education, evaluation and training.

proMENTE Centres are hubs of expertise which we draw on when we implement projects or conduct research or training for other: The Education Policy Centre, Centre for Sustainable Development, Centre for Evaluation Methods, Centre for Voluntarism and Civil Society, Centre for Lifelong Career Management and Centre for Human Resources Management.

proMENTE is a member of the OSF-supported world-wide Network of Education Policy Centres.

[www.promente.org](http://www.promente.org)

### **Stockholm Environemt Institute – Tallinn centre – Estonia**

SEI Tallinn centre is a key national expert on environment and energy, sustainable development and number of policy issues in the Estonian society. SEI Tallinn's agenda is driven by local, European as well as global challenges in sustainable development. The Centre links SEI know-how on the promotion of sustainable development, resilience and adaptation, environmental protection, nature conservation by analysing the impact of environment-related policies, management practices, market-based instruments, socio-economic issues, energy efficiency measures and environmental governance studies in the region. In its commitment to bridging the gap between science and policy-making, SEI Tallinn employs innovative methods in communicating its work to governments, the private sector, other research institutes, and the society as a whole.

<http://www.sei-international.org/tallinn>

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Numerous reports on Education for Sustainable Development (ESD) have been commissioned in the lead up to Rio+20 but few provide empirical evidence which map the state of play and have the potential to inform policy and practice at a national level. This ENjoinED publication is rather special in that it brings together civil society organisations with research institutes to inquire as to the presence of ESD within formal curricula. The book which is informed by empirical evidence makes a valuable contribution to the ESD literature through asking critical questions, marrying qualitative and quantitative analysis and through focusing on a region where ESD at the national level is under-researched.

**Professor Daniella Tilbury, UK**



**NEPC Comparative Studies in Education**



This project is funded by the European Union <http://ec.europa.eu/world/>

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**ISBN: 978-953-57241-0-0**