2010:13

Sida Review

Arjen E. J. Wals
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Education for Sustainable Development

Research Overview

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Sida Review 2010:13

Commissioned by Sida, Department for Human Development,
Team for Knowledge, ICT and Education.

Date of final report: February 2010

Published by: Edita 2010

Art. no. Sida61266en

ISBN: 978-91-586-4131-0

URN:NBN se-2010-21

This publication can be downloaded from: http://www.sida.se/publications

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Acronyms

AWLAE	African Women Leadership in Agriculture and Environment
CSO	Civil Society Organisations
CSR	Corporate Social Responsibility
DESD	Decade of Education for Sustainable Development
EE	Environmental Education
EFA	Education For All
EfS	Education for Sustainability
ESD	Education for Sustainable Development
FBOs	Faith Based Organisations
GENIA	Gender in Education Network in Asia
GLSD	Global Learning for Sustainable Development
GUiC	Growing Up in Cities
LAC	Latin America and Caribbean
MDGs	Millennium Development Goals
MESA	Mainstreaming Environment and Sustainability in African Universities Partnership
NGOs	Non-Governmental Organisations
PRELAC	Regional Project of Education for Latin America and the Caribbean
PLACEA	Latin American and Caribbean Program for Environmental Education
RCEs	Regional Centres of Expertise
SADC	Southern African Development Community
SD	Sustainable Development
UNECE	United Nations Economic Commission for Europe
UNCED	United Nations Conference on Environment and Development
UNDAFs	United Nations Development Assistance Frameworks
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNLD	United Nations Literacy Decade
UNU	United Nations University

Executive Summary

This discussion paper, commissioned by HIFAB on behalf of Sida, outlines some of the main characteristics of Education for Sustainable Development (ESD), particularly in the context of 'development' and 'globalization'. It addresses the various interpretations and meanings of ESD, shows how these relate to environmental education and emerging educations that overlap with SD-issues and introduces sustainability competence as a key outcome of ESD. The paper also outlines some regional trends that affect the way ESD manifests itself in the various countries and regions around the world. Some key developments affecting ESD are introduced, including globalization, the rise of the information and knowledge society, the utilization of diversity and the need for the inclusion of marginalized groups and perspectives. Although the report uses a number of written resources, either in print or in digital form, it relies to a large degree on a recently published UNESCO report reviewing the Decade of Education for Sustainable Development (DESD) (UNESCO, 2009a).

Education for sustainable development is a vision of education that seeks to balance human and economic well-being with cultural traditions and respect for the Earth's natural resources. It emphasizes aspects of learning that enhance the transition towards sustainability including future education; citizenship education; education for a culture of peace; gender equality and respect for human rights; health education; population education; education for protecting and managing natural resources; and education for sustainable consumption.

The relationship between Environmental Education (EE) and ESD is a crucial one to understand. Blindness of the various manifestations of EE and ESD, their histories and the ways in which they relate, can easily lead to misunderstandings when development agencies such as Sida assume that they are similar to those in the country in which the agency is based. There are important differences to be observed in terms of both the contents of EE and ESD and the underlying pedagogical and didactic dimensions which are deeply connected to a country's or region's perspectives of citizen participation and democracy. The often forgotten 'E' in ESD can be conceptualized in different ways, depending on the amount of space there is for participation, self-determination and autonomous thinking. When this space is narrow, a more transmissive version of ESD is likely to result with a strong emphasis on instructional forms of teaching and knowledge transfer. When this space is broad, then ESD will emerge that is characterized by higher levels of participation, self-determination, autonomous thinking and knowledge co-creation. The latter, more transformative, versions of ESD require alternative teaching and learning strategies that also allow for the development of new competences. A country's tradition in governance might affect what a country emphasizes; a more pedagogical orientation towards ESD consequently implying (social) learning, participation and capacity-building or a more instrumental orientation that emphasizes a change in people's behaviour.

As the 'E' in ESD is increasingly being emphasized there is more attention for the kinds of capacities of qualities people need to develop in order to be able to contribute to sustainable development. The concept of 'sustainability competence' refers to those qualities people need to have to be able to act when confronted with a sustainability challenge. Several of these competences are described in this paper.

Although both the challenge of sustainable development and the call for ESD is worldwide there is a general understanding that the local realities and manifestations of 'unsustainability' are often quite different and deeply rooted in local histories and political and cultural traditions. The paper provides a number of so-called regional sketches of sustainable development challenges that show that each region has its own pressing issues and hurdles to overcome when trying to address them. At the same time we see an undercurrent of common themes and systemic patterns that appear to transcend regions. The contextual differences that do exist from region to region but within these hugely diverse regions

themselves as well, will lead to different meanings, priorities and strategies for ESD. These differences indeed are rooted in traditions in governance but also in the key existential challenges a region is presently facing. Traditions in governance are likely to affect whether a country adopts a more pedagogical orientation towards ESD emphasizing (social) learning, democracy and participation or a more instrumental one emphasizing changing people's behaviour in a pre-and expert determined direction.

As far as the focus of ESD is concerned from a thematic point of view, countries facing extreme poverty, HIV/AIDS, and rapid loss of biodiversity, are likely to focus the content of ESD differently from those who are facing high oil-dependency and excessive consumerism, the two target groups.

As far as the strategies for implementing and developing ESD is concerned, a region's networking capital will determine the extend to which countries can call upon regional and sub-regional networks of international organizations, NGOs, Civil Society Organisations (CSOs) but also upon inter-governmental support mechanism in its effort to strengthen ESD. Although contextual differences are likely to remain, and from a diversity point of view should remain, there still is a need for inter-regional learning (south-south, north-south, north-north) as there are globalizing forces and systems that affect all regions that can be understood better when discussed inter-regionally. At the same time such international dialogue will allow for the sharing of lessons learnt and creative solutions found in each region's, sub-region's and country's attempt to develop and implement ESD.

All regions report that having a regional ESD strategy is useful although it is not clear whether they are 'living strategies' in that they are actively used to stimulate action at the various policy-levels and that they are frequently re-visited, updated, re-confirmed, (re)endorsed and shared by all relevant stakeholders. Presently it appears that the only strategy which is consistently monitored and fully endorsed by countries in the region is the UNECE ESD strategy and to some extent the Asia-Pacific regional strategy.

The discussion paper also addresses the position of ESD in formal, non-formal and informal education. Especially to let the billions of young people participate in addressing global challenges, education plays a main role: not only formal education, but also non-formal and informal education. Since also the latter two shape the attitudes and values of young people. Currently, the general picture of formal education is that it does not yet point to a major reform of the educational systems to better incorporate sustainability and contribute to sustainable development but rather minor adjustments to the existing system.

In some parts of the world, both in Western and Non-Western contexts, we see multi-stakeholder partnerships or 'vital coalitions' emerge that use social learning to co-create their own pathways towards sustainability. Sometimes terms such as 'community problem-solving' are used to describe this type of learning. Much of this learning takes lace in the context of non-formal and informal learning and is often-times facilitated by NGOs.

It can be concluded that despite the undeniable progress that has been made around the world, there still exist a number of common ESD implementation challenges including; the lack of financial and governmental support and coordination, the lack of a common understanding and awareness of ESD and the lack of ESD capacity building. Many countries need assistance in:

- Generating financial support earmarked for ESD;
- Reforming and re-orienting of educational contents, methodology and curricula to address ESD-based skills, knowledge, and values;
- Facilitating and strengthening networking between schools, educational institutions/organizations and other partners involved in ESD at a national and international level;
- Producing materials and tools in ESD;

- Improving legal and regulatory measures that support ESD;
- Designing ESD-professional development programmes and ESD-pre-service training programmes for teachers, educators, administrators and leaders;
- Establishing for deepening a national ESD strategy and develop commitment towards it;
- Exchanging good examples, and sharing knowledge and experience;
- Promoting ESD research, monitoring, evaluation, and dissemination;
- Creating linkages between ESD and EE as well as with other emerging educations.

1. Introduction to Education for Sustainable Development

1.1 The emergence of ESD; a historical perspective

ESD has become an important element of environmental policy making and sustainable development strategies. The seeds planted in the seventies at many international conferences on environmental education (EE), including the Man and Environment conference held in Stockholm in 1972 and the UNESCO-UNEP conference on Environmental Education held in Tbilisi in 1997, found a fertile soil of broad-based mutual concern for sustainability as expressed at the UNCED Earth Summit in Rio de Janeiro in 1992. Chapter 36 of Agenda 21 emphasizes that education is a 'vital factor' in the promotion of sustainable development and, as well, in the development of people's skills when dealing with environmental and development issues (Gadotti, 2009). Chapter 36, which is called *'Promoting Education, Public Awareness and Training',* defines the four thrusts of ESD as stated below:

1 Improving access to quality basic education

2 Reorienting existing education to address sustainability

3 Increasing public understanding and awareness of sustainability

4 Providing training for all sectors of the economy

Within the UN-framework ESD relates to two distinct areas of core interest for the United Nations: (1) quality basic education; and (2) sustainable development, which in turn links to a concern with human – environment – development relations. Building on a 30 year history of environment and development education, the United Nations Decade of Education for Sustainable Development (UNDESD) (2005–2014) was proposed and accepted at the World Summit of Sustainable Development in 2002, where the *Johannesburg Declaration of Sustainable Development* (UN, 2002) was issued. In December of the same year, the UNDESD was adopted by the UN General Assembly through resolution 57/254 with the UNESCO designated as the lead agency (UNESCO, 2009a). According to UNESCO, the Decade's specific goals are:

- to facilitate networks and bonds among activists that defend ESD;
- to improve ESD teaching and learning;
- to help countries to adopt the Goals of the Millennium by means of ESD;
- to offer countries new opportunities to adopt ESD in their efforts of educational renewal.

Many educational policies of a variety of governments both in the North and the South call for the integration of ESD and ESD-related, so-called 'adjectival' educations, such as; climate change education, development education, health education, peace education, citizenship education and environmental education both in formal education and non-formal learning. At the same time business and industry have also discovered ESD, strategically, as a public relations tool but also existentially as a way to transform 'business as usual' into more socially, ethically and environmentally responsible business practices (Corporate Social Responsibility, CSR). Some sponsor the production of ESD-related materials, some donate money to ESD-related organizations, and some, indeed, try to employ their own SD-experts and have developed HRD-strategies to facilitate the development of the competences needed to move towards a more SD-responsive business. Recently ESD is increasingly mentioned in international policy circles as a key instrument for realizing the Millennium Development Goals (MDGs, see also Chapter 1.3), making ESD an essential field of expertise for organizations that are active in the 'development arena'.

It is clear that the world-wide development of ESD is ongoing and has been accelerated more recently by the UNDESD but also by a world-wide concern about runaway climate change. We will first introduce the (inter)national policy frameworks currently in place for ESD before addressing the meaning of ESD around the world and the it (not is) relates to regional and global trends

1.2 ESD national coordination bodies, structures, and policies

In 2006, 44 countries in the world had a national ESD coordinating body. By the end of 2008, at least 78 countries had such a body; a remarkable achievement in a relatively short period. There are some regional variances. The Europe and North America region has made considerable progress as compared to other regions. Members of national coordination bodies often include government representatives and representatives from formal education (e.g., educational policy-makers, administrators and, occasionally, teachers) and NGOs. In some countries, the private sector is also represented. The levels of government involved in coordinating ESD differ from country to country. In some, the responsibility lies with government ministries while in others responsibilities have been decentralized to the regional level. There are also differences in the scope of ESD covered by a national coordinating body, varying from a narrower interpretation of ESD (e.g., coordinating ESD in formal primary and secondary education, streamlining it with existing EE programs) to a much broader interpretation. A broader interpretation usually also covers non-formal learning and professional development of teaching staff and spans the whole of formal education from early childhood education to higher education. In general, there is little mention of the representation of labor unions, religious groups and the mass media in national coordinating bodies (UNESCO, 2009a).

The Mid-DESD review (UNESCO, 2009a) concludes that the presence of such a body in and by itself does not mean that this is an entity that creates synergy and energy and plays a stimulating role in engaging stakeholders in contributing to the development of ESD. At the same time, the absence of such a body does not necessarily mean that ESD is non-existent or weak. There are examples of countries that do not have a formal national coordinating body but show a lot of ESD activity (e.g., Brazil). Nonetheless, it appears that countries that do have a national coordinating body in place are more likely to also have the other ESD provisions.

Worldwide there is a notable presence of ESD in national policy documents. The majority of them address broadening participation in ESD and re-orienting educational curricula. ESD is mainly integrated in national educational policies and curriculum statements, especially in primary and secondary education. In some cases SD and ESD are both part of a country's environmental strategies. At the same time, it can be concluded that most countries do not yet have a specific national ESD policy or strategy. The Ministries of Education and Environment are mainly involved in the establishment of such policies and National Action Plans. In some cases, other stakeholders are also involved (NGOs and representatives from business and industry). Practically all countries contributing to the Mid-DESD review report (UNESCO, 2009a) that sustainable development and/or sustainability are in their national constitutions. But, while public development policies always seem to include references to sustainability, they do not always refer to the role of ESD. This explains the emergence of two general trends: on the one hand, we find countries that have developed SD strategies and/or national commitments to the DESD that explicitly include ESD in their formulations, while on the other hand we find countries that instead have incorporated ESD-related concepts in national processes, policies and strategies within existing EE frameworks.

When looking at ESD around the world, there is no blueprint of what education for sustainable development contains. Although we tend to make distinctions between the ESD approaches of different continents; Africa, Asia, and Latin America, this is not as straight forward as it might seem to be. Also, it would be a reflection and continuation of the strict divisions made in the past while it is more helpful not to look at how they differ but at how they are connected.

An example from the Pacific Islands shows that the principles of ESD are deeply rooted in their traditional cultures. In Tongan culture, for example, the main purpose of ako (learning) is to gain knowledge and understanding that is considered important for cultural survival and continuity, or put differently; important for sustainable living. (*nofo fakapotopoto,* literally 'intelligent living') (Thaman & Thaman, 2009:65). ESD is universal but surely not the same throughout the world.

1.3 Links with other global education and development initiatives

Education is such an important tool that governments and international agencies decided to make it a joint priority. From the year 2000, they adopted four new initiatives to work together for development and for education:

1 The Millennium Development Goals (MDGs)

2 Education for All (EFA)

3 The United Nations Literacy Decade (UNLD) 2003–2012

4 The United Nations Decade of Education for Sustainable Development (DESD) 2005–2014

The first initiative is coordinated by the UNDP, the other three by UNESCO. All these initiatives aim to improve the quality of life, promote human rights, have a commitment to education and increase participation of everyone in development and education. The MDGs, as listed below, consist of several goals which are related to ESD.

Goal 1: Eradicate extreme poverty and hunger

Goal 2: Achieve universal primary education

Goal 3: Promote gender equality and empower women

Goal 4: Reduce child mortality

Goal 5: Improve maternal health

Goal 6: Combat HIV/AIDS, malaria and other diseases

Goal 7: Ensure environmental sustainability

Goal 8: Develop a Global Partnership for Development

The MDGs and the DESD have a broader purpose than just education; they go beyond this. Therefore these two initiatives need to be linked strongly, at policy level in member states, as was also recognized in the Bonn Declaration (2009b):

> *"The progress of ESD remains unevenly distributed and requires different approaches in different contexts. In the coming years, there is a clear need for both developed and developing countries, civil society and international organisations to make significant efforts to: Mobilize adequate resources and funding in favour of ESD, in particular through integrating ESD into national development policy and budgetary frameworks, into UN common country programming processes and other country-level policy frameworks (such as sector-wide approaches), as well as into EFA and MDG initiatives. Promote and include ESD in the priorities of foundations and donors."*

Education for sustainable development is a vision of education that seeks to balance human and economic well-being with cultural traditions and respect for the Earth's natural resources. It emphasizes

aspects of learning that enhance the transition towards sustainability including future education; citizenship education; education for a culture of peace; gender equality and respect for human rights; health education; population education; education for protecting and managing natural resources; and education for sustainable consumption.

While EFA and UNLD, by virtue of their mission to ensure the right to education for all, address the needs of all learners – in particular those who are excluded from quality basic education –, the DESD has other incentives. The DESD addresses the relevance and necessity of education for sustainable development for all, whether they are within or outside of planned learning activities. All people have to live in a sustainable manner keeping the global situation in mind. In many ways those who are in privileged positions in societies where consumerism dominates have the most to learn and put into practice about sustainable development.

Each of the four initiatives has developed its own way of working, but aspires to create synergy with the others. UNESCO has developed some ways of promoting international cooperation for each initiative like an EFA Working Group and annual Global EFA Monitoring Report and an inter-agency group to coordinate approaches and share experience in promoting literacy. For the DESD, a High-Level Advisory Panel has been established. In reality these linkages need more attention than that has been given to it currently. The Mid-DESD review states that there is still no one concerted effort towards sustainable development within the UN-system and that this needs to become a priority in the second half of the decade (UNESCO, 2009a).

An interesting 'Southern' view on ESD is presented by Gadotti (2008) who sees current education and educational institutions as barriers for moving towards sustainable development (SD) as they tend to reinforce the principles and values of an unsustainable lifestyle and economy. He argues for an economy that is not centered on free market, profit and continuous growth. Instead he favors a 'solidarity economy' which incorporates the principles of inclusion and social emancipation and identifies sustainability and solidarity are emergent and convergent themes. Gadotti proposes that without social mobilization against the current economic model, education for sustainable development (ESD) will not reach its goals. In addition, education for a sustainable life—not only for a sustainable development—is required.

2. Environmental Education and Education for Sustainable Development

The relationship between EE and ESD is a crucial one to understand. Blindness of the various manifestations of EE and ESD, their histories and the ways in which they relate, can easily lead to misunderstandings when development agencies such as Sida assume that they are similar to those in the country in which the agency is based. There are important differences to be observed in terms of both the contents of EE and ESD and the underlying pedagogical and didactic dimensions which are deeply connected to a country's or region's perspectives of citizen participation and democracy.

2.1 The content dimension of ESD

The inter-relationship with environmental education (EE) is emphasized in nearly all regional reports that provided input for the Mid-DESD review of the Decade of Education for Sustainable Development (UNESCO, 2009a). This is no surprise as in many countries around the world EE is firmly established, particularly in formal education systems. The simultaneous existence and development of EE

and ESD has given rise in some countries to questions about the relationships between the two and the call for distinctions by some or for convergence by others. The resulting confusion or stale-mate in some cases can hinder policy implementation. Also, it appears that in countries with a strong EE tradition ESD tends to build upon EE-structures and policies are already in place particularly in countries that have interpreted EE broadly to include social, economic and political dimensions. The quote below illustrates this:

> *… issues of development, survival, livelihoods, improved quality of education and improved quality of life, and more sustainable living practices. It is perhaps for this reason that environmental educators in southern Africa have long been concerned with environmental education processes that are processes of social change (Lotz-Sisitka, 2004: 10).*

In countries where such a tradition is absent or weak at best, ESD and the DESD appear to have provided an opportunity to create new structures from scratch and a possibility to catch up with those countries that already had a strong EE-tradition. When analyzing the regional synthesis reports and the regional strategies, one can roughly find three different ways of viewing the relationship between EE and ESD which resemble some of the ones identified in the ESDebate held in 1999 (Hesselink et al., 2000)[1]. The way the relationship is perceived tends to be related to the historic role EE has played in a country (prominent or marginal) and the way EE itself is interpreted (broad or narrow). With regard to the former, there are countries that developed nature conservation education already over one hundred years ago. This paved the way for EE in the 1960s and 1970s, whereas in other countries this was hardly the case. In some countries with a strong EE-tradition, it is often narrowly viewed as expanded nature conservation education or a combination of environmental protection education and resource management education (e.g. several countries in Europe & North America). In other countries with a strong EE-tradition (e.g. several African and Latin American countries) it may be interpreted more broadly, in tune with the Tbilisi Declaration[2], to include socioeconomic and political aspects. When interpreted as such EE and ESD become almost synonymous. These three relationships are described as follows: 1) EE equals ESD, 2) EE is a part of ESD and 3) EE and ESD have elements in common but are distinct. We borrow from the Mid-DESD review report to describe each of these relationships.

EE equals ESD

Environmental education has been firmly established over time and in the spirit of the forward looking Tbilisi Declaration. It is viewed broadly to include issues of poverty, inequity, values, and ethics. The emergence of ESD is not necessarily seen as an opportunity for renewal or reform but rather as a distraction of the good work that is already being done in the name of EE. In the worst cases, ESD might actually have a negative effect on the good work done under the flag of EE as this field is no longer seen as up-to-date or relevant by policy-makers and donors since it does not reflect ESD supported by, for instance, the DESD and the international community (this is the case in some African countries).

Two responses within this view of the relationship between EE and ESD can be seen. In some countries, EE continues to evolve and remains popular because people can identify better with it than with ESD (e.g., USA). In other countries, where the government has joined the international group of nations that committed themselves to ESD, groups are strategically or pragmatically adopting ESD, without necessarily changing their EE-practice in order to remain eligible for funding and government support. In the latter case one can sometimes see the emergence of EE for sustainable development (e.g., Taiwan) or EE for sustainable societies as is the case in Brazil.

[1] The full text of the report based on the on-line ESD-debate can be downloaded from: http://www.hect.nl/publications/ESDebate2.pdf

[2] The Unesco-UNEP 1977 Tbilisi declaration on Environmental Education can be downloaded from: http://unesdoc.unesco.org/images/0003/000327/032763eo.pdf

Some environmental educators have become leaders in ESD in various regions of the world. In these places, ESD is greatly shaped by environmental education. In the Asia-Pacific region, for example, environmental educators have taken the lead in defining, (add comma) promoting, and practicing ESD. According to the UNESCO Bangkok office and some practitioners of EE in the Asia-Pacific region, EE is becoming ESD. Also the environmental education community in southern Africa (i.e. Heila Lotz-Sisitka) has taken the lead in ESD, partly because it already contained a strong social component. In other regions, such as North America where nature study has greatly influenced EE, it would require a much greater stretch for EE to become ESD. In contrast, ESD in the United Kingdom and Ireland is being organized more around citizenship education (McKeown et al., 2007).

When EE would become ESD, one might get concerned that the former could lose some of its uniqueness. For example, EE is known for the underlying concept that humans are part of nature. EE emerged out of environmental concern. In contrast, ESD is centred far more on humans. Sustainable development was founded in a search for a balanced approach to environmental, social, and economic interests. In the end, it would be a pity to lose the worldview that humans are part of nature as EE becomes human-centred ESD. Such a loss would ultimately impoverish ESD (McKeown *et al.,* 2007).

EE is a part of ESD

Whereas, in some of its forms, EE narrowly focuses on environmental protection, natural resource management and the conservation of nature, ESD tends to go further by bringing in socio-economic, political and cultural dimensions. In a sense, some countries felt that EE had become outdated and needed to be upgraded and replaced by ESD to better focus not only on the Planet but also on the People and Prosperity aspects of environmental and sustainability issues. In some parts of the world, the emergence of ESD has provided a stimulus for EE-reform in this way and in countries where there was no tradition in EE or where it was marginally present; the DESD movement provided an opportunity for a jumpstart (e.g., Vietnam, many Arab countries).

EE and ESD have elements in common but are distinct

ESD and EE are distinct, although they do overlap and both are legitimate and necessary. The old EE infrastructure and existing programmes therefore, will need to be supported still and government support for ESD should not be at the expense of EE. At the same time the development of ESD needs to be supported as well as it adds important new dimensions that EE does not address or only addresses lightly (e.g., the socio-economic and cultural dimension.) As a result parallel policy streams and support mechanisms exist: one focusing on EE and another on ESD (e.g., The Netherlands, Canada, Greece). Sometimes coordination mechanisms are in place to assure that the EE stream is also informed by the ESD stream and vice versa.

In this context Gadotti states (2008:28)

> *"Education for sustainable development must continue working with environmental education which brought a new view of human relationships with the world environment – which is no longer conceived as an object, but as a living creature that shares the same destiny with human beings. Environmental knowledge is ethical and political. It isn't only a matter of understanding ecological principles, but also involves a new concept of reality."*

Figure 1 illustrates that from a 'content'-perspective ESD and EE relate to one another. The figure shows that when both EE and ESD are interpreted broadly to include the political, social, cultural and economical (EE+ and ESD+), they become almost synonymous. Interestingly enough, when interpreted narrowly (EE-and ESD–) to mainly focus on the environmental and the ecological, they also become almost synonymous. EE in the Tblisi spirit is generally considered EE+, while ESD as described in UNESCO documents is generally considered ESD+ especially when related to all the Millennium Development Goals (and not just to MDG number 7 which focuses on 'environmental sustainability').

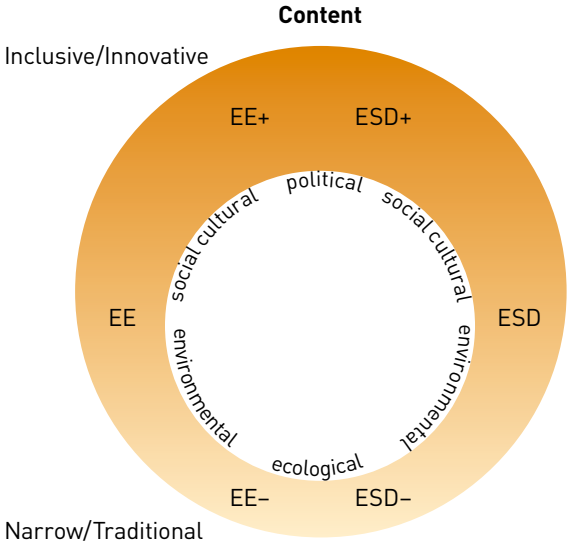


Figure 1: Different interpretations of ESD and EE and their relationship from a content perspective

2.2 The pedagogical dimension of ESD

Whereas during the early years of ESD much attention was given to the meaning and content of the SD in ESD, recent ESD documents and discourse tend to pay much more attention to the 'E' in ESD. The underlying learning processes of ESD are beginning to become subject of debate. Generally speaking there appears to be a shift from *training and instruction* (simply put: telling and training people how to live their lives) to *learning and capacity building* for SD (simply put: enabling people to contribute to sustainability in a meaningful and contextually relevant way). This shift reflects the perceived need for continuous engagement in sustainability in formal, non-formal and informal settings on the one hand and the need for capacity-building, participation and self-determination for sustainable development on the other. These different outlooks on ESD have important consequences and often have a social and cultural background as different societies have different boundaries for participation, autonomous thinking and self-determination, and a corresponding view of democracy.

Ecopedagogy

At the Paulo Freire Institute (São Paula, Brasil) the Earth Charter (www.earthcharter.org), has been included as a transversal, interdisciplinary, generative theme of all their projects. To achieve this, the concept and vision of an Ecopedagogy, also called Earth Pedagogy, has been created as an appropriate pedagogy for the Earth Charter, the environmental education, and the education for sustainable development (Gadotti 2009:13).
This Ecopedagogy relates closely to ESD and is a pedagogy focused in life; taking into account people, cultures, life styles and the respect towards identity and diversity.

Gadotti (2008:22) advocates for a new and radically democratic pedagogy to fight against the capitalist economic globalization. A new economy has emerged; the solidarity economy. A rich ongoing process in the world, one that is guided by the principles of solidarity, sustainability, inclusion and social emancipation. This is closely linked to planetary citizenship and a culture of justipeace (peace generated by justice) as mentioned by Gadotti (2009:30). The solidarity economy's practices involve cultural changes that are only possible through cultural groundwork and deep changes of values and principles that guide human behaviour towards the concept of what is sustainable and what is not. Gadotti prefers to speak about Education for a Sustainable Life, to name a few of the educational objectives: global thinking, recognizing our identity on the Earth as a vital human condition, planetary awareness, voluntary simplicity and quietness.

2.2.1 The role of participation and democracy

A fundamental question about the role of education in society remains to be asked: is education about our common future. Learning is seen as a key component of innovation that leads to social change. A central aspect of ESD is that learners develop the ability to evaluate global and inter-generational issues and formulate strategies for solving the problems that arise from these issues (Almlöv & Moberg, 2008:174). There are differences however in the amount of space learners get to work towards their own, self-determined and co-created, solutions to sustainability issues and challenges. These differences are related to a country's or region's interpretation of democracy, participation and inclusiveness.

A fundamental question about the role of education in society remains to be asked: Is education about social reproduction or about enabling social transformation, and this debate is reflected in the way educators imagine the educated citizen interacting within society (Jickling & Wals, 2008:8–11). This question is not answered in the same way across the globe but the way it is answered has major implications for the way ESD is interpreted and implemented.

Using the two composite conceptions of education, and the two corresponding views of an educated citizen, Wals and Jickling (2002) have constructed a simple heuristic as pictured in figure 2.

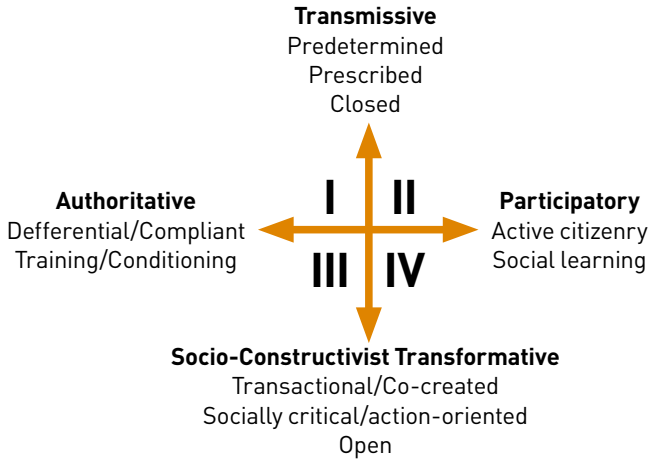


Figure 2. Positioning of ideas about 'education' alongside the social role of the 'educated person' (Jickling & Wals 2008)

Jickling and Wals (2008) claim that all quadrants in the figure are legitimate but that those designing ESD-type programs for adults and young people alike, should be aware of and open about in which quadrant they are operating. Many ESD projects and activities can be positioned in the heuristic presented here, particularly in the quadrants I, II and IV. A key question to be raised is: how aware or conscious are those supporting, designing, implementing, monitoring and evaluating these projects and activities of the nature of participation that is offered or allowed? Such awareness and reflection on the underlying assumptions and their resulting implications for the role of citizens in these projects, is critical if only to avoid that people are unwittingly being used to advance an agenda entirely set by outside authorities or are given the illusion of full participation whereas in reality their space for self-determination and autonomy is limited by a glass ceiling. The former gives way to manipulation and control, while the latter leads to tokenism and false participation (Hart, 1997). Both could easily lead to permanent damage of the future participation potential of citizens when they discover they have been used to advance somebody else's cause or when they realizing that the freedom they were given was bound by the agenda's of scientific experts and policy-makers.

In conclusion the 'E' in ESD can be conceptualized in different ways, depending on the amount of space there is for participation, self-determination and autonomous thinking. When this space is narrow, a more transmissive version of ESD is likely to result with a strong emphasis on instructional forms of

teaching and knowledge transfer. When this space is broad, then ESD will emerge that is characterized by higher levels of participation, self-determination, autonomous thinking and knowledge co-creation. The latter versions of ESD require alternative teaching and learning strategies that also allow for the development of new competences. Figure 3 shows the pedagogical dimension of ESD and EE. A country's tradition in governance might affect what a country emphasizes a more pedagogical orientation towards ESD consequently implying (social) learning, participation and capacity-building or a more instrumental orientation that emphasizes a change in people's behaviour.

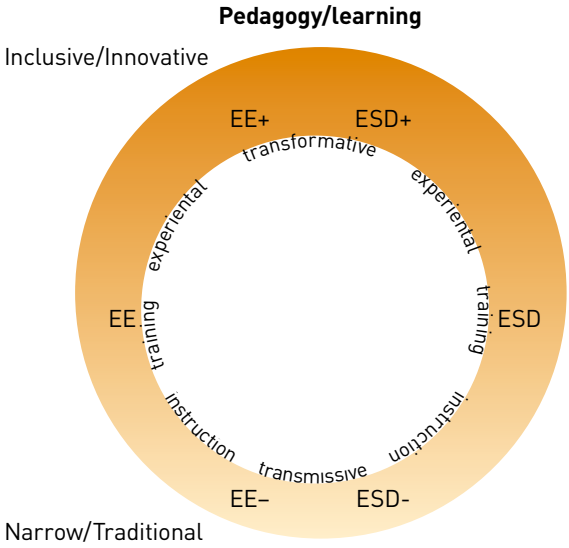


Figure 3. Different interpretations of ESD and EE and their relationship from a pedagogical perspective

2.3 Relation between ESD and other emerging educations

The framework of the DESD International Implementation Scheme suggests that full-fledged ESD requires the integration of the three dimensions referred to earlier in this review (UNESCO, 2009a):

- the *socio-cultural dimension* which 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;
- the *environmental dimension* which refers to issues related to natural resources (water, energy, agriculture, biodiversity),climate change, rural development, sustainable urbanization, disaster prevention and mitigation;
- the *economic dimension* which refers to issues related to poverty reduction, corporate responsibility and accountability and re-orienting the market economy.

The relationship with Environmental Education, the encounter between EE and ESD, has already been discussed in paragraph 1 of this chapter. Besides EE, there are many other educations that are related to Education for Sustainable Development, all related to one of the dimensions mentioned.

On the socio-cultural dimension for instance, there is Peace Education, Citizenship Education, Development Education, HIV/AIDS Education, Health Education, and Human Rights Education. When it comes to the environmental dimension it is, besides EE obviously, also Biodiversity Education, Educating for Food Security and especially Climate Change Education which is very profound at this moment. The rise of Climate Change Education is seen by some as the next stage in the evolution of nature conservation education to environmental education to ESD as it addresses an overarching sustainability

issue that can only be addressed in an integrative way from multiple angles, disciplines and perspectives (Selby, *in press;* Kagawa & Selby, 2010). However, others, particularly within UNESCO DESD argue that climate change education is an important part of ESD just like some of the other adjectival educations (UNESCO, 2006:28). Economically, one could think of examples like Disaster Risk Reduction and Programme of Education for Emergencies and Reconstruction (PEER) which might have overlap with other dimensions as well.

Finally, Global Learning for Sustainable Development (GLSD) is currently emerging from the increasing international concern with issues of Sustainable Development and the demand for both Global Learning as well as education for sustainable development (Anderberg *et al.* 2008:369). Global learning is explained as developing learning on the uncertainty of knowledge, in the process of establishing links between everyday problems, global processes and lines of conflicts. There are several challenges to GLSD in Higher Education on the university/institutional levels, curriculum level, and the individual level. Only relatively limited steps have been implemented to achieve GLSD, and rhetoric still dominates the discussions. It appears that little empirical research has been undertaken on learning in global settings. There is a need for a competence-based curriculum for GLSD. Universities, professionals and students need to take greater responsibility. How knowledge, values and abilities are formed and developed from the global learner's perspective therefore, remains an open and fundamental question.

Although in a narrow focus, one can distinguish relatively few and sometimes no mutual or overlapping concerns which are shared among the different educations, at their broader focus, there is. Greig *et al.* (1987) compared Development Education with Environmental Education, Human Rights Education and Peace Education and they concluded already back then that there is an extremely marked degree of convergence between the four 'educations'. One could state that Education for Sustainable Development (or ESD+ as referred to earlier) meets these 'educations' (and more, the model could be extended) in the middle. When working at the broad focus it can be recognized that the respective principal concepts are complementary, interdependent and mutually illuminating. This is illustrated in Figure 4, on the next page.

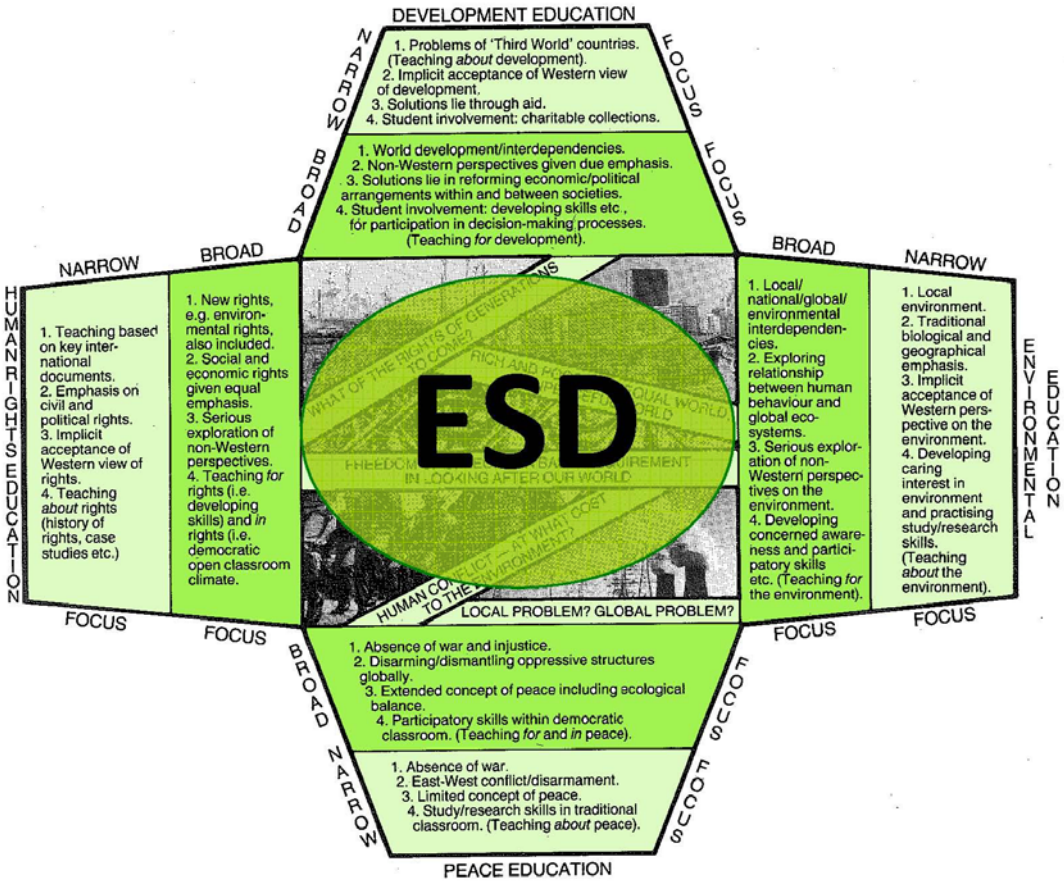


Figure 4. The relationship between four 'adjectival' educations related to ESD[3]

It is clear there is a wide range of interpretations of ESD yet there is consensus about some core components. The kind of sustainability challenges a country faces might affect the SD-components that are emphasized. A strong history in EE but also the way EE is interpreted itself is likely to affect the meaning of ESD as well. Where such a history is lacking or where EE has been interpreted narrowly to focus on nature conservation and environmental protection, ESD can be developed and given meaning on its own terms. At the same time an emergence of a whole range of other 'adjectival' educations that tend to privilege a single ESD-issue (e.g., peace, human rights, gender, HIV/AIDS) can be seen across the globe which may require some fine-tuning so that they end up reinforcing one another rather than competing.

2.4 ESD in the context of Globalization

To formulate global guidelines for ESD, which should be more or less independent of culture, is hardly possible. There is a tension between these guidelines and the local context should always be addressed. The UNESCO Education Sector Report of 2007 (UNESCO 2007) asks two questions; *how can we uphold cultural diversity in the age of globalization? How is it possible to strengthen minority cultures in this current wave of western culture, which is spreading around the world?* These are very important questions since there is a struggle between global and local initiatives, also within the UN. UNESCO has a strong commitment to ESD which is locally relevant but also promotes global mandates of furthering particular educational goals 'for all' (McKenzie, 2008).

[3] Adapted from *Greig, Pike, Selby (1987). Earth Rights. Education as if the planet really mattered. London: Kogan Page & WWF. p.29. The figure has been caught up by history in some ways as it still lists 'East-West conflict' as a key topic in 'narrow' peace education.*

In development theories there have been several approaches throughout the years. In the 20th century, modernization was the keyword. Euro-American ways of life were predicated as unique, primary, and superior. Through this, western invention was legitimated in places considered to be less developed (Slater, 2003). In the post-development times, localized and traditional practices and understandings came to the forefront. These should be conserved and sustained. Now we arrived at a point where the suggestion is made that a blending process needs to take place, a level of hybridity of the global and the local is inevitable in most contemporary contexts. This is a refocusing on the local, within a realization of global influences and possibilities, the realm of the so-called 'glocal' or of 'vernacular cosmopolitanism' (McKenzie, 2008).

Globalization has led to exponential growth of communication possibilities and the access to information of which the authority base is oftentimes unclear or dubious. Even in the poorest parts of the world people now have access to wire-less networks and use cell-phones as their main lifeline. Where companies and governments have failed to provide clean drinking water for all – a development goal of the last millennium one could say – they have succeeded in rolling out wireless all over the globe. Cases have reported of people living in poverty who have come to rely on their cell phone in such a way that charging the phone receives higher priority than feeding their children. The latter illustrates the different sides of the globalization coin. As technology has in some ways provided 'access for all' to the information and communication age, and the world of consumerism, it also has disrupted the lives of many in negative ways (Ellwood, 2003; Kenway and Bullen, 2001).

For ESD the homogenizing effect of the economic liberalization that oftentimes is associated with globalization is posing a challenge (Jickling & Wals, 2008). For instance, the glorification of the knowledge society and the commoditization of education in general and higher education in particular, tend to favor the creation of a global economy with a mobile, resilient and 'life-long learning' workforce who also play the role of eager consumers of universal products at the expense of local identities, critical thinking and values alternative to material ones (Raven, 2001).

The international experts' workshop on Faith-based Organizations and Education for Sustainability (organized by UNESCO-CAT, 2007) refers to an SD-divide. First there is the 20% of humanity living "overdeveloped" lifestyles (including wealthy people in privileged areas of poor countries) who must learn to *undevelop* (or develop in an alternative direction), to reduce their current overconsumption and to find fulfilling lifestyles based that are not exclusively based on material values and allow for a more moderate use of natural resources. And, second, there are the masses of the poor who face quite a different challenge. The not-yet-overdeveloped rest of humanity, including all the poor in the South and all indigenous and traditional peoples, must learn to fulfill their needs (including running water, food security, and adequate health care) in a sustainable way and without falling into the lure of overdevelopment and consumerism. Rather than being exposed to the subtle colonialism of advertising and materialism, they should be offered or, better perhaps, co-create alternative models of development. At the UNESCO-CAT workshop it was often noted that, ' not only should we in the overdeveloped world not preach sustainability to indigenous peoples: we should aim to learn from those who have been practicing sustainable lifestyles over the centuries.' (UNESCO-CAT 2007:16)

2.4.1 Information Technology contributing to ESD

The planetary consciousness associated with ESD very well might be at odds with the negative side-affects – or worse – the underlying agendas of globalization. Within ESD there are a number of emerging responses to this dilemma which include: the rise of critical consumer education (Ransom, 2003) and information literacy but also the use of cell phones and ICT in ESD-activities (Alakeson *et al.,* 2003). The latter, ICT, is mentioned by Anderberg *et al.* (2008) with respect to the role of universities in developing countries. Information technology and internet-based distance education, which allows for reduced costs and increased flexibility in offering materials, make high-quality lectures available to a wider audience.

The internet is a tool with many possibilities, and there are nowadays thousands of web pages devoted to sustainability. But is the World Wide Web truly worldwide? It mainly reaches the globalized world and e-materials should therefore aim at those who live in the 'overdeveloped world' and have access to electricity and internet (UNESCO-CAT 2007). A good example of using ICT to strengthen ESD is the work of the Bahá'i-inspired International Environment Forum[4], which uses almost exclusively the internet to link its 150 members (working with governments, universities and other institutions) and works mostly through virtual conferences. It has also set up a distance course on sustainability via the internet. Once the technological infrastructure is set up, working though the internet is relatively inexpensive.

3. Competences needed for contributing to sustainable development

As the 'E' in ESD is increasingly being emphasized there is more attention for the kinds of capacities of qualities people need to develop in order to be able to contribute to sustainable development. The concept of 'sustainability competence' refers to those qualities people need to have to be able to act when confronted with a sustainability challenge. We will here introduce a number of qualities that altogether comprise (aspects of) sustainability competence. Many of these qualities can also be used to improve organizations and to trigger innovation and resilience in, for instance, companies. Such innovation and resilience only contributes to sustainability when they are embedded in a 'planetary consciousness' or 'with Earth in mind' otherwise they might just as well equip individuals and organizations in becoming '… more effective vandals of the Earth' (Orr, 1994:5).

What are the kinds of outcomes of an ESD process that focuses on capacity building for SD?
The Swedish contribution to a report on ESD in higher education in some European countries states the following (Wals, 2007b):

> *"The competency required for SD is manifold, but the basis of it is relevant knowledge and an ability to think, act and take responsibility out of a holistic understanding of the preconditions of life on earth in a global perspective. It includes the ability to continuous learning from others and the ability to cooperate over disciplinary and professional borders, to think and analyse critically and to solve problems seeing possibilities and limitations in ones processional role. An important ability is also that of complex thinking and using specialists for different areas. Leaders need to have the ability to create enthusiasm and to think in new creative ways."*

In the report the Dutch contribution states that components of sustainability competence include: understanding sustainable development, systems thinking, adopting an integral view, personal leadership and entrepreneurship, unlocking creativity, appreciating chaos and complexity, and fostering collective change. The German contribution to the same report introduces the notion of Gestaltungskompetenz (De Haan 2006). Gestaltungskompetenz describes pupils' abilities to apply knowledge on sustainable development and to identify problems of non sustainable development. This means, they are able to draw conclusions from studies into the present or future in the areas of ecological, economic and social development in their varying relations of interdependence, and take decisions on the basis of these conclusions, understand these decisions and apply them individually, as part of a community and politically in order to further sustainable development processes (Wals and Blewitt, *in press*).

[4] www.bcca.org/ief.

Thus Gestaltungkompetenz aims to fashion an historical, systems orientated and largely holistic framework for understanding and action. There are elements of similarity with both deep ecology and critical cultural theory in their design and application with specific acknowledgement of the importance of mediation, dialogue and social participation but it also seems that a more incisive recognition of, and engagement, with the dangers and negative consequences of societal power relationships, conflict, inequality and ideology is required. Table 1 shows some elements of Gestaltungskompetenz in the context of sustainability. One could say that Gestaltungskompetenz with a planetary consciousness constitutes sustainability competence.

Sustainability Competence or rather Gestaltungskompetenz
• Competence to think in a forward-looking manner, to deal with uncertainty, and with predictions, expectations and plans for the future
• Competence to work in an interdisciplinary manner
• Competence to achieve open-minded perception, trans-cultural understanding and cooperation
• Participatory competence
• Planning and implementation competence
• Ability to feel empathy, sympathy and solidarity
• Competence to motivate oneself and others
• Competence to reflect in a distanced manner on individual and cultural concepts

Table 1 Elements of Gestaltungskompetenz (Source: Michelsen and Adomssent 2007)

Gestaltswitching (Wals and Blewitt, *in press*) refers to the switching back and forth between different mind-sets. In the context of sustainability there is a multitude of "Gestalts" in play. Figure 5 indentifies four of them: the time Gestalt (past, present, future and intergenerational mind-sets), the disciplinary Gestalt (a range of social science and natural science mind-sets), the space gestalt (local, regional, global and beyond global mind-sets) and the cultural Gestalt (multiple cultural mind-sets whereby culture is broadly understood). Sustainability competence then refers to one's ability to respond to a sustainability challenge with all these Gestalts in mind and to consider the challenge from a range of vantage points. The switching back and forth between different positions requires an awareness of ones own predominant Gestalts and a willingness to, at least temporary, put oneself in another Gestalt on all four dimensions identified in figure 5. It can be argued that one Gestalt needs to be added still which might be called the "trans-human" Gestalt which suggests we also need to be able to imagine the world from the perspective on the non or more than human world, allowing more eco-centric and bio-centric mind-sets to enter our thinking and acting as well. Transformative social learning towards sustainability requires the integrative switching back and forth between the various Gestalts, mind-sets or lenses identified here.

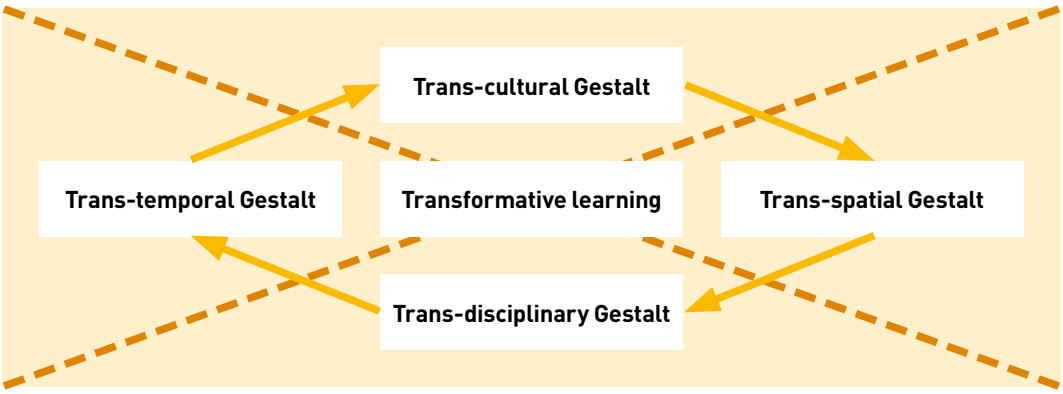


Figure 5 Four key Gestalts in play in transformative learning towards a more sustainable world

An important task of ESD is to help learners appreciate and utilize difference. The development of knowledge and understanding has both personal and shared elements to it. Social interaction allows one to relate or mirror his or her ideas, insights, experiences and feelings to those of others (see also the intercultural dimension in Figure 4). In this process of 'relating to' or 'mirroring' these personal ideas, insights, experiences and feelings are likely to change as a result. This mirroring may lead the learner to rethink his or her ideas in light of alternative, possibly contesting, viewpoints or ways of thinking and feeling. At the same time (learning) experiences, which are shared with others, are likely to gain importance. This is not to say that personal experiences, which are kept to oneself, are insignificant. But shared viewpoints or ways of thinking and feeling give the learner a sense of competence and belonging to the community of learners.

Another component of sustainability competence, related to these Gestalts and the ability to switch between them, is the ability to cope with uncertainty. This is a major challenge for higher education as traditionally many scientists consider minimizing uncertainty and maximizing predictability one of their key quests. The emergent uncertainty paradigm however holds that it is an illusion to think that we will ever be able to achieve zero uncertainty or even get close to that. Instead this uncertainty paradigm suggests that more science, information, knowledge might not necessarily lead to less uncertainty, it may actually lead to more as new complexities and questions arise. Instead of putting our academic minds towards minimizing uncertainty and maximizing predictability it might be more fruitful to put our energy towards living with uncertainty: seeing it as a fact of life, something that can not be conquered. In light of sustainability this also implies that we need to develop a 'precautionary reflexivity' that can steer us clear of the inaction, paralysis and apathy that often results from the prevailing 'wait and see' attitude among many citizens, including scientist, which suggests that until we are not sure, and until there is disagreement among scientist and policy-makers about what is happening to the planet, we have no reason to break with our existing routines and can return to business as usual. In their edited volume on education and climate change, Kagawa and Selby write: *"As a fundamental contribution to climate change [prevention and adaptation], it seems that educational spaces should build a culture of learning awash with uncertainty and in which uncertainty provokes transformative yet precautionary commitment rather than paralysis"* (Kagawa and Selby 2010: 243).

Finally, there is a number of what could be called 'generic competencies' that are not specific to sustainability but may turn to be crucial nonetheless. Of those 'leadership' may be one that stands out. On organisation such as LEAD – which was borne out of the Rio Earth Summit in 1992 – has made sustainability leadership the core of its mission. LEAD does so by identifying outstanding people across sectors and cultures, developing their leadership potential and understanding of sustainable development, and mobilising and supporting them as a network to achieve the change required (www.lead.org). Similarly, the association of University Leaders for a Sustainable Future (ULSF) which forms the secretariat for signatories of the Talloires Declaration (1990) signed by over 400 college and university presidents and chancellors worldwide – has made sustainability leadership in higher education one of its priority areas. According to Arbuthnott (2008:162) universities, as a primary source of knowledge generation and application, are in a position to provide strong leadership in the development of sustainable communities. This they can perform, both through their own management and through ESD programs for the students who will be our future leaders.

4. Inclusion and exclusion in relation to ESD

ESD, when interpreted from an emancipatory or transformative learning point of view (see 2.2.1) tends to be pre-occupied with, among other things, bringing in marginalized voices and utilizing diversity. Needless to say that, depending on the space available in a specific country and or region for participatory approaches and what some refer to as 'deep democracy' (Appadurai, 2001; Shiva 2005) the possibilities for inclusivity will vary. Most attention in ESD to inclusivity goes to 'gender', 'youth', 'religion', and 'indigenousness. The latter is often also connected to bringing in the voice of 'the elders' or the older generations. Franz-Balsen and Mat Isah refer to an emerging 'gender & diversity' paradigm which they say stands for a new trend in political and organizational cultures which esteems individuals as unique and valuable members of society or within an organization. Gender is here just one of several features of discrimination (race, ethnicity, religion, sexual orientation, handicaps) and this approach is in fact an anti-discrimination program (Franz-Balsen & Mat Isah, 2009).

Within ESD a critical and theory-based discourse on gender issues concerning the vital functions of schools and universities is still missing Franz-Balsen and Mat Isah argue. It is important to take into account that gender issues and marginalization phenomena are embedded in national and local cultures; therefore there are different views for every region.

4.1 Gender

Gender competence is the key term that describes both the indispensable qualification of school and university teaching staff that want to integrate gender issues in their lectures and seminars and the competence to be acquired by students. It consists of gender expertise in combination with methodological skills and the ability to apply all this in the right moment in professional contexts (Franz-Balsen & Mat Isah, 2009). When viewed broadly such competence extends beyond gender to include other, often marginalized, perspectives as well which relate to the earlier mentioned distinctive features of discrimination that may provide cues for jointly moving towards sustainability.

In many parts of the world gender discourse is much influenced by religious and societal beliefs which have influenced decision making structures at the societal level (man's decision is believed to be superior to women's). In most countries in Asia, for instance, diversity is looked upon in terms of ethnicity and religion.

Franz-Balsen and Mat Isah (2009) point out that sustainability issues should be discussed at the grassroot level, and not only at the decision-making level (usually men). Looking at the society structure, women are more influential when it comes to educating and instilling awareness on sustainable development to the young and even the whole family. They suggest that when one wants to get environment and sustainability issues across, it might therefore be more effective if this is done through women, especially housewives and mothers educating their children at home. From there, gradually the emphasis of gender responsibilities can change and allow for more consultative and participative forms of decision making. At last, this can change society as a whole.

When looking at the work done in ESD in a UNESCO context it can be stated that compared to other aspects, gender hardly plays a role in the national strategies for ESD that are being developed. Some efforts have been made however. For instance, in 2006 UNESCO Bangkok updated the Gender in Education Network in Asia (GENIA) Toolkit for Promoting Gender Equality in Education and also recommends using this tool for assessment and planning in ESD.

Another example to promote women leadership and capacity building in relation to ESD is the African Women Leadership in Agriculture and Environment (AWLAE). This is a Nairobi-based pan-African non-governmental organization, founded by Winrock International. It is now an independent NGO called AWLAE-net. AWLAE and Wageningen University became partners in a project to train 20 women scholars from 11 African countries to do their PhD at Wageningen University. The project started in 2003 and will end in 2010. It is funded by the Netherlands Ministry of Foreign Affairs. The research undertaken in the project comprises of themes that relate to the role of women in food and livelihood systems in sub-Saharan Africa. The consequences of HIV/AIDS for women in their roles as food producers in agriculture, income earners and food providers in rural households and care givers in households afflicted by HIV/AIDS are explored. Although the actual topics of research and the disciplinary backgrounds of the scholars vary, gender and food are focal themes in all AWLAE PhD projects. Similarly many development organizations and foundations are now allocating money for allowing potential leaders from the ' south' to get a PhD or MSc in SD-related areas.

4.2 Youth

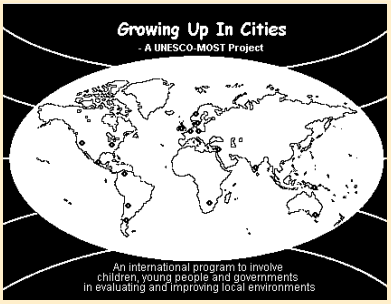
When looking at the role of young people in SD and the role of ESD in engaging young people in shaping their own future there are many examples such as the Sandwatch project[5] which is carried out in 23 countries. It seeks to modify the lifestyle and habits of children, youth, but also adults on a community-wide basis to develop awareness of the fragile nature of marine and coastal environment and develop sustainable approaches to the problems confronted with. Another case, the otherWISE project, is presented by Fien et al. (2008), which seeks to build capacity of young Australians to be agents of change towards sustainable lifestyles in their communities.

Not only in the rural areas will children and youth be involved in sustainable development, there are also many opportunities for the urban areas. One example of a project that has been very successful is the Growing Up in Cities programme (GUiC, see vignette below) supported in part by UNESCO and carried out by an international network of child advocates and researchers, community-based organisations, and municipal officials (Driskell & Chawla 2009:93).

Growing Up in Cities

Growing Up in Cities (GUiC) is an international action research initiative to create better cities. It engages not only children and youth, but also adults as co-researchers in evaluating local environments, documenting where they live and how they use and value the places around them in order to plan and implement change.

The project has its roots in the work of Kevin Lynch, who launched a four-country research project with UNESCO in the 1970s. Re-launched in the 1990s, the project has since been active in more than 60 cities in low-income, urban communities of 20 countries.[6]



From the examples and cases presented above, it shows that the emphasis is on youth but also the importance of engaging adult citizens is not overlooked. According to Monroe (2007), in future research there is a need for ESD to carve a new niche that promotes high quality and effective ESD programmes. With an eye towards practice and applied research, research in ESD should focus on strategies that promote sustainable behaviours and engage adult citizens in decision making. Our abilities to practice education for sustainable development could be greatly enhanced by research in these two arenas: compelling adults to action and engaging citizens in problem solving.

[5] http://www.sandwatch.ca
[6] http://www.aap.cornell.edu/aap/crp/outreach/growingupincities.cfm

4.3 Religion

UNESCO calls for faith organisations to play a role in assisting societal transition towards sustainability through education for sustainability (EfS). However, the interface between sustainability and spirituality, and the insights that faith organisations can provide to efforts to build more sustainable societies, has received little explicit consideration in the broader international institutional EfS discourse (Podger 2009).

Rabbi Soetendorp and Michael Slaby write about the role of religion in ESD. According to them, the difference the inclusion of spiritual elements is stunning (Slaby & Soetendorp 2009). Singing, praying, a moment of silence, may have a deeper effect than yet another presentation of the disastrous ecological trends for instance. People start to ponder deeply ethical questions such as the purpose of their being and what kind of world they would like to leave behind for their children to inherit.

At a March 2007 UNESCO expert workshop on Faith Based Organizations (FBOs) and Education for Sustainability exploring the specific role of religious organizations in the United Nations Decade of Education for Sustainable Development (DESD), using the Earth Charter as a guide in teaching and learning was considered an important step in the deepening of the global dialogue on SD. The Workshop aimed to explore how the strengths and perspectives of FBOs be mobilized in the service of EfS (UNESCO-CAT 2007[7]).

As Rabbi Arthur Waskow stated, "the whole world is today in an earthquake: politics, economics, sexuality… all is off the ground. People look for something that isn't quaking, desperately trying to find something stable, and so they don't pay attention to the state of the Earth". Our calling today, as Rabbi Waskow emphatically put it, is like "learning to dance in an earthquake". This quaking will transform everything, including religions: "We know what religious traditions were like three hundred years ago, but we don't know how they will be after learning to dance in an earthquake" (UNESCO-CAT 2007)

A new sensibility has emerged, as one of the participants (Mary Evelyn Tucker) pointed out, sustainable development is usually regarded as "an uneasy alliance of ecology and economics". This is, however, a very narrow conception. Sustainability needs to be placed in a larger, spiritually inspired context that includes the following major elements:

1) Planetary awareness.

2) Caring for future generations.

3) Nurturing bioregional cultures and local knowledge.

4) Expanding our ethical horizon.

5) Celebrating life.

According to Tucker, the world's religions can play a major role in fostering this fivefold emerging sensibility.

A case study by Podger (2009) outlines evidence suggesting that spirituality is a means of motivating individuals and communities to engage in transformation towards sustainability. It explores the perspectives and experiences of the American Bahá'í Community as it has engaged with sustainability and Education for Sustainability frameworks over four years. The study found that the faith organization considers spiritual education and education that develops critical-thinking skills as essential and interconnected aspects of educating for sustainability, and that its perspectives may beneficially be incorporated into the EfS discourse.

[7] The full report is available at http://www.arcworld.org/downloads/Barcelona%20Report.pdf

5. Regional ESD Perspectives, Challenges and Issues

Although both the challenge of sustainable development and the call for ESD is worldwide[8], as already mentioned in Chapter 1.2, there is a general understanding that the local realities and manifestations of 'unsustainability' are often quite different and deeply rooted in local histories and political and cultural traditions. Therefore, regional strategies for the development and implementation of ESD have been developed in each of the regions: (sub-Saharan) Africa, Asia, and Latin America. In this section we will sketch the perspectives from these three regions. The sketches literally come from the Mid-DESD review which was recently completed by Wals (UNESCO 2009).

5.1 Key SD challenges in Sub-Saharan Africa[9]

The DESD in Africa cannot be understood in isolation from its contribution to the achievement of the Millennium Development Goals, and to the alleviation of poverty in Africa. Other key issues that need to be considered when interpreting ESD progress in Africa include the following:

- The need to use education more effectively to address the eradication of poverty.
- The need to recognize that human development is closely linked to longevity (health and well-being), knowledge (education) and living standards (income). Overall Africa has not been progressing well with any of these three critical dimensions of achieving better quality of life.
- Key issues affecting Africa include: HIV & AIDS, vulnerability to climate change, changing social structures where many families are now being headed by grandparents and children, and lack of food security. Institutional capacity to respond to these issues is also a key issue.
- The majority of Africans live in rural areas and are heavily dependent on the use of natural resources for sustaining their livelihoods. Loss of, and degradation of these resources reduces livelihood options, and options for sustainable development.
- Major capacity gaps exist for the achievement of sustainable development, and this capacity deficit presents a significant obstacle to achieving sustainable development in Africa.

The re-orientation towards sustainable development of education in Africa requires strengthening and boosting the *quality and the efficiency* of human capacity development initiatives (education, training, community development and public awareness programmes) to address governance efficacy and the relevance of education to development and poverty alleviation objectives. Hence, EFA initiatives need to focus not only on quantity (getting as many children to school as possible) but also on *quality*, as going to school without access to quality education means very little. ESD has the potential to contribute significantly to the *quality* of educational programmes, and this contribution needs to be pro-actively explored in the DESD in Africa.

Region-specific ESD issues

The potential contributions to enhancing quality of education and ultimately quality of life in Africa are enormous as ESD can help address a number of key needs in the region, including the need:

- to develop greater synergies between school and community (e.g. education in schools and literacy initiatives amongst adults; education in schools and employment opportunities for youth etc.) to address sustainable development goals.

[8] The UBUNTU declaration is available at http://www.ias.unu.edu/sub_page.aspx?catID=108&ddlID=304

[9] The draft Strategy of Education for Sustainable Development in Sub-Saharan Africa can be retrieved via: www.dakar.unesco.org/news/pdf07/observatory_strat.pdf

- to re-orient education in Africa to be more aligned with and situated in African cultures, knowledge and contexts. African countries are still in the process of defining education systems that are both locally and globally appropriate and relevant.
- for new creative thinking in society, and new economic thinking that can produce new economic models that can benefit more people, and new social responses that respond to changes in culture and in social structures and lifestyles that also help people to protect the value of their natural resources for current and future generations. This poses many new challenges for the education systems, as many education systems in Africa are still guided by either colonial histories or globalization trajectories.
- to critically appraise and address the 'real underlying causes' of unsustainable development in Africa if ESD is to have any meaning (e.g. colonial legacies, cultural beliefs and practices, inappropriate development models, social inequality, wealth accumulation for the benefit of the elite at the expense of the majority, corruption and lack of delivery associated with the 'trickle down' approach to wealth sharing, inequalities embedded in trade structures and so on).
- the need to listen to diverse 'voices' in establishing the agenda for the ESD in Africa including those of; policy makers, educators, community members, learners, etc. These provide a fuller picture of how ESD can be conceptualized and implemented. ESD should not only be policy driven.
- for expanding and building leadership for implementing ESD in Africa.
- to build on what is already going on in EFA initiatives, UNLD and MDG initiatives, and to use the EFA process to bring out the ESD focus, values and practice. Education in Africa has been heavily influenced by international programmes which have often been difficult to realize and implement due to local resource constraints. ESD needs to be understood as 'another' international initiative that has to find its place amongst other competing priorities such as HIV/AIDS education, EFA, literacy, peace building and human rights. The integrative possibilities of ESD therefore need to be nurtured and strengthened.

The importance of (sub)regional networking, both formally and informally, is stressed in the African Regional Synthesis Reports. Regional Economic Community Co-operation on ESD. One example of such cooperation is the Southern African Development Community (SADC) which is a Regional Economic Co-operation initiative. The networking and collaboration taking place within SADC has revealed a number of critical insights for the region affecting the potential of ESD in African contexts:

- Poverty, environmental degradation, increased health risk and food security are key issues that need to be understood in relation to each other to ensure appropriate educational responses. These need to be understood in the context of educational reform efforts, and curriculum change processes.
- ESD provides an integrating and integrated focus for education.
- There is inadequate debate on sustainable development issues in southern Africa. ESD can strengthen people's participation in sustainable development and problem solving.
- There is a need for policy synergy to strengthen implementation of ESD in southern Africa.
- A wide array of partnerships, partnership networks and partnership approaches exist for enabling ESD in southern Africa.
- A rich variety of ESD practices exist. Indigenous and local knowledge, values and ethics, critical and creative thinking, situated, active learning are some of the dimensions of ESD practice that were identified as being significant in Southern Africa.
- There is a need to strengthen ESD research and research capacity.

- There is a need to consider more carefully how ESD brings focus and relevance to mainstream education, training and public awareness initiatives.

Another strongly emerging network in Africa is MESA. The overall aim of the MESA Universities Partnership is to enhance the quality and policy relevance of university education in Africa in the context of sustainable development and achievement of the Millennium Development Goals. MESA is a UN DESD and UNEP supported initiative that stands for Mainstreaming Environment and Sustainability in African Universities Partnership.

Despite this tremendous potential ESD offers in meeting the above needs most of it remains untapped according to the Southern & East Africa Regional Synthesis Report.

5.2 Key SD-challenges the Asia-Pacific region[10]

Although all regions are impressive in terms of size, population and diversity, the Asia-Pacific region spans the crown on all three dimensions. The region includes five sub-regions which are all impressive in size and diversity and combined hold more than half the world's population. Some key challenges to consider when interpreting ESD progress in the Asia-Pacific include the following issues[11], which vary from sub region to sub region, country to country and also within national borders:

Cultural barriers

- Ethnic, religious and linguistic barriers resulting in migration, lack of citizenship, human rights issues and conflict;
- Traditional concepts and beliefs, particularly with regard to girls' education and life skills education; and
- Loss of indigenous and traditional knowledge.

Geography

- The geographic size of larger countries in the region, large populations and diverse languages is a big challenge for sustainable development due to difficulties in networking, transportation and communication and limited delivery of services; and
- Rural and remote areas, in particular, small island nations are often faced with marginalized populations and more expensive delivery of services.

Governance and national coordination

- Lack of interministerial coordination and cooperation can result in limited or uncoordinated political leadership on key issues. This poses a challenge as many countries require political support to implement new programmes, concepts and ideas;
- Decentralized management and decision making between the national and provincial levels in larger countries can result in variability in the levels of development;
- Lack of financing for key projects, corruption, security and armed conflict also pose major challenges.

Education

- Shortage of donor support for formal and non-formal education to overcome issues associated with underpaid or under qualified teachers and trainers;

[10] The working paper on the Asia-Pacific Regional Strategy for ESD is available at http://www.unescobkk.org/fileadmin/user_upload/esd/documents/esd_publications/working-paper.pdf

[11] Data from global DESD questionnaire responses supplemented with information from Asia-Pacific subregional EFA Mid-Decade Assessment reports, Asia-Pacific ESD Monitoring Country Updates and 2008 Asia-Pacific Subregional ESD Consultations

- Gender disparity in education, including disparities among teachers and the management levels in primary, secondary and higher education;
- Universal primary education and universal completion can only be achieved in most countries if the efficiency, the quality and the inclusiveness of the education system is improved;
- Early Childhood Care and Education (ECCE)[12] will remain outside the reach of most young children unless efforts are undertaken to provide adequate financial resources for all children to participate; and
- Marginalized and disadvantaged groups continue to face obstacles that prevent quality education and learning, such as:
  - street children and working children;
  - religious, linguistic and ethnic minorities as well as indigenous peoples;
  - persons/children with disabilities or with special need;
  - children of very poor families;
  - population in remote areas; and
  - children in more difficult circumstances (i.e., places affected with armed conflict, disasters and calamities)

Human resource capacity

- Low adult (15 and over) literacy rates, especially among women;
- Limited training and professional development in a variety of contexts including industry, formal education and the community;
- The need for cooperation and coordination between different government departments and Ministries and the private sector to synergize skills training programmes that better match the needs of trainees and labour market demand; and
- Effective initiatives for adolescents and youth are needed to develop their life and livelihood skills, including adolescent and reproductive health.

Natural disasters

- In the recent past, the Asia-Pacific region has faced an increasing number of recurring natural disasters – tsunamis, earthquakes, cyclones, floods, droughts, volcanic eruptions, etc. – which remain a challenge for sustainable development due to temporary and prolonged disruptions to infrastructure, the surrounding environment, socio-economic structures and ways of life.

Many of these challenges were re-emphasized as thematic sustainable development priorities by UNESCO Member States during 2008 Asia-Pacific Sub-regional ESD Consultations, sponsored by the Japanese Finds in Trust (Table 1).

Table 1 Thematic SD-priorities in the Asia-Pacific Region (Source: UNESCO Bangkok Regional Office)

SD Pillar	Thematic SD priorities
Social	Good Governance, Gender Equity, Health and HIV/AIDS, Reproductive Health, Peace/conflict, Human Rights, Access to education, Human trafficking, Drug addiction
Cultural	Cultural Heritage, Cultural Preservation, Indigenous Knowledge
Economic	Urbanization, Poverty, Food Security, Rural Development
Environmental	Climate change, Fresh Water, Energy/Natural resources, Air Pollution, Desertification, Environmental Conservation, Biodiversity, Natural Disasters

[12] More information is available at www.unescobkk.org/education/appeal/programme-themes/ecce/

Region-specific ESD issues

Based on regional consultation workshops, ESD in the Asia-Pacific region is now at a point where countries are beginning to engage in clear strategies for ESD – moving from ESD in theory to practice – by identifying clear thematic national SD priorities, linking priorities to existing aims and objectives for education and learning in current policies, building inter-ministerial support, discussing financing and engaging with the right people at the national level. These recent developments are steering towards a goal to incorporate or link ESD to national development plans, national sustainable development strategies and/or poverty reduction strategies to increase the importance of the role of ESD in addressing the growing list of recent sustainable development challenges in the Asia-Pacific region.

ESD is developed the most in the region within formal education. There is little government engagement in the non-formal and informal education settings. As a result there is insufficient government funding for non-formal and informal ESD awareness raising programmes and initiatives. Furthermore there is little attention for the development of ESD-materials and tools for groups that fall under the category of non-formal and informal education.

There is an emphasis to promote regional cooperation. For example, UNESCO Bangkok and several UN agencies discuss the DESD in the UN DESD Interagency Steering Committee of the Asia-Pacific. The Committee updates members on the implementation of each other's past events, promotes joint planning and alignment of activities. ESD requires the full support of the government to move forward. As ESD is a cross-sectoral initiative, many government ministries and departments, in addition to NGOs and IGOs are involved in ESD-related activities. It is not only difficult to coordinate ESD activities among the various Ministries, departments and sectors, but it is also challenging to identify ESD in existing initiatives and philosophies.

5.3 Key SD-challenges in Latin America and the Caribbean[13]

The Latin American and Caribbean region encompasses over 40 very diverse countries, ranging from mid-income countries such as Mexico and Chile, to least developed countries such as Haiti, from Small Island States to countries with vast territories such as Brazil and Argentina. The key SD challenges vary accordingly, but a few general observations can be made.

Despite a favourable economic development, progress in reducing poverty is too slow: in 2001, 24.5 per cent of the region's population was poor according to World Bank data and it is estimated that in 2006 probably still more than 20 per cent of the population lived in poverty[14]. Income disparities in Latin America are greater than anywhere else in the world, leading to inequity with regard to access and quality provision of services such as health, education, electricity, drinking water. Many groups within society – for example indigenous people and women – are especially affected by this. Violence and crime continues to grow, especially in the cities, due above all to social inequity.

The region's eco-systems are of global importance. The region includes five of the world's ten most biodiverse countries – Brazil, Colombia, Ecuador, Mexico, and Peru – as well as the single most biologically diverse area in the world – the eastern slope of the Andes. These are habitats for many plant and animal species and play a role in regulating the global climate. However, biodiversity in Latin America is under severe threat, as these five countries are also among the 15 countries in the world whose fauna is most threatened with extinction.

[13] The LAC Regional ESD Strategy is available at www.oei.es/decada/portadas/estrategiaregional.htm

[14] The World Bank data on poverty can be accessed via PovertyNet. PovertyNet provides an introduction to key issues as well as in-depth information on poverty measurement, monitoring, analysis, and on poverty reduction strategies for researchers and practitioners. PovertyNet can be found via: www.worldbank.org/html/extdr/thematic.htm

The problems of global climate change and the threat to biodiversity are considerably exacerbated by the lack of protection afforded to tropical forests. This makes the region even more vulnerable to extreme climate phenomena such as cyclones, floods and droughts. Small Islands in the Caribbean are furthermore threatened by rising sea-levels.

An up-coming challenge or opportunity for Latin America and the Caribbean is the production of biofuels, which on the one hand can help protect the climate and create new income opportunities in the agricultural sector, but on the other hand could lead to further clearing of the remaining forest areas and to higher prices for staple foods.

Region-specific ESD issues

Within the context of the DESD, UNESCO and the Earth Charter[15] together gave impulse to the formulation of a regional strategy for the Decade at the Latin American meeting *"Construyendo una Educación para el Desarrollo Sostenible en América Latina"*, in San José, Costa Rica, 2006. Priority actions identified at the Latin America & Caribbean strategy-building conference "Building an Education for Sustainable Development in Latin America and the Caribbean," held in San José, Costa Rica in 2006[16], are:

1 Involving actors responsible for political, technical, and administrative decisions in diverse spheres of government, legislation, business, and other organizations, in conjunction with NGOs, networks, and social movements.

2 Calling upon specialists from the educational, scientific, technological, professional communities to actively participate. These also include representatives of traditional knowledge and technologies.

3 Involving those people who, because of the position they occupy, can act as barriers or drivers of processes related to promotion of ESD, such as leaders of syndicates, communities, civil society organizations, religious organizations, communicators and journalists, coordinators of networks, coalitions, and social movements.

4 Although all members of societies are to benefit from the actions undertaken during the DESD, particular importance is given to vulnerable sectors including children, youth, elderly, indigenous populations, and other excluded groups.

The LAC Regional Strategy acknowledges that the concept of sustainability has a potential to integrate and create synergies between diverse educational themes and other United Nations educational action frameworks that have been important in the region, namely, environmental, inter-cultural, peace, human rights, poverty alleviation, health, HIV, literacy, and gender equity education. Also, the agenda of the Dakar Education for All Action Framework and the Millennium Development Goals were considered as fundamental referents that need to be articulated through this Strategy.

The strategy is based on a shared vision that by the end of the Decade, through public educational policies and active participation of educators and communicators, Latin America and the Caribbean will have been able to contribute to counteract the more acute processes of environmental contamination and destruction and will have made substantial progress in the construction of just and sustainable societies.

With regards to the need to provide an adequate financial and resource base for the development of ESD in the region, the Strategy considers that it is paramount to assure that all actors, including governments, international organizations, private sector, and civil society organizations, make a joint commitment. Therefore the Strategy considers it is imperative to incorporate ESD as a priority issue in the agenda of the forums of ministers of education and environment in Latin America and the Caribbean.

[15] For more information go to: www.earthcharterinaction.org/

[16] At this meeting a draft strategy document was created, which went through an electronic consultative process from November 2006 to February 2007. The final version was the product of this consultation. An executive summary of the results of the meeting can be found at: www.earthcharterinaction.org/ECI_LADESDMeeting_ExecSum.pdf

It also calls upon international organizations to promote the DESD in the Region and specifically calls upon UNESCO and UNEP to jointly forge synergies with other multi and bilateral agencies, such as WHO, FAO, UNICEF, UNDP, and UNFPA. The Strategy also acknowledges the need to coordinate DESD activities with on-going regional programs[17] such as the Regional Project of Education for Latin America and the Caribbean (PRELAC) and the Latin American and Caribbean Program for Environmental Education (PLACEA).

The strategy is seen as an excellent regional instrument to promote ESD in Latin America and the Caribbean. It is the first regional instrument designed especially for ESD (and not exclusively for environmental education). It was developed in a participatory and consultative process which made it possible to involve various stakeholders and several countries from the region and led to a certain degree of consensus building on the topic of ESD.

Unfortunately, no information exists about follow-up actions to the Strategy and the progress of its implementation. It is therefore recommended that the Earth Charter and UNESCO as the initiators of the Strategy reinforce their efforts to promote and implement the Regional Strategy.

5.4 Regional Centres of Expertise and Partnerships

It should also be noted that some regional developments have received some encouragement by the formation of Regional Centres of Expertise (RCE) after negotiations for the Fifth Ministerial "Environment for Europe" Conference, which took place in Kiev in 2003 (Mochizuki & Fadeeva, 2008). In 2005 in Nagoya, Japan, at a conference celebrating the Asia-Pacific launch of the United Nations Decade of Education for Sustainable Development (DESD), the United Nations University (UNU) announced the formation of seven RCEs on ESD involving collaboration and cooperation between Higher Education Institutions and other formal and non-formal educational providers. These linkages between informal, non-formal and formal education are a key element in ESD. The educational and research roles of groups not involved in formal education are sometimes less obvious and must be defined by the RCE. In the case of Saskatchewan (Canada), the RCE aims to understand the impact of, and for, non-formal educational sectors (Dahms *et al.* 2008). Another example is the case of Kobe University (Japan) where it is shown that interdisciplinary collaboration is essential in creating an innovative education programme in higher education (Itoh *et al.* 2008)

By June 2009 the number of RCEs had increased to sixty-two with Centres in Africa, North America, Asia, Europe, the Middle East but just one in Latin America (Curitiba-Parana). The impetus behind this initiative has been the desire to stimulate action, the creation of vertical (i.e. between different levels of government) and horizontal partnerships (i.e. between different local stakeholders), and opening up stakeholders to dialogue and change to remedy the deficiencies in globally dominant unsustainable education systems.

The overall aim is to establish local/regional knowledge bases which are both culturally sensitive and relevant to their localities and in a relatively short period can establish vibrant and effective communities of practice. The pedagogic emphasis is on knowledge creation through active, contextually grounded, learning although the most common barriers and obstacles RCEs face are ignorance of ESD principles and the institutional compartmentalization of teaching and research in disciplinary silos and industrial era mindsets (Mochizuki & Fadeeva, 2008). Many RCEs are fostering action research as a means of establishing new learning spaces and opportunities.

[17] See for instance the Santo Domingo Declaration signed in 2009 at the Sixteenth Forum of Ministers of the Environment of Latin America and the Caribbean. This Forum of Ministers constitutes the main body for regional inter-governmental political consensus building on environmental issues and offers a space to agree on actions and reflect on the main challenges of the global and regional environmental agenda, in the context of sustainable development. The Declaration can be found at: www.gloobal.net/iepala/gloobal/tematicas/crearpdf.php?id=6528

Besides RCEs there are also partnerships being established between several formal, non-formal and informal (educational) institutes or organizations, see the example of African Universities below.

MESA

Mainstreaming Environment and Sustainability in African Universities Partnership (MESA) is a programme which grew out of a meeting, in 2004, of a number of African universities, the United Nations Environment Programme (UNEP), UNESCO, and several African regional environment and education projects to assess the status of environment and sustainability education in Africa. Together they aim to develop a programme to help universities integrate environment, economics, health, poverty and development into a meaningful learning experience. The programme seeks to offer opportunities for collaborative projects among universities, governments, civil society, communities and the private sector.

6. ESD Formal, Non-formal and Informal Education

6.1 ESD in Formal Education

To let young people participate in addressing global challenges, education plays a main role. Not only formal education, but also non-formal and informal education. Since also the latter two shape the attitudes and values of young people. Together with the formal schools, they play a strong role in shaping the society (Nyoni, 2009:88). Currently, the general picture of formal education is that it does not yet point to a major reform of the educational systems to better incorporate sustainability and contribute to sustainable development but rather minor adjustments to the existing system. An example is the case of Zambia (see box below).

Sustainable development through curriculum change

The case of the Localized Curriculum in Zambia

The Zambian Curriculum has been reviewed and moved from the content to the outcomes based curriculum. By introducing Community Studies and integrating it with the other learning areas the curriculum will be 'localized'. This learning area aims at imparting knowledge, skills, positive attitudes and values to the learners within a locality for individual and community sustainable development (Zambia Ministry of Education 2005).

Also, countries appear to have difficulty envisioning the potential role of early childhood education in advancing (E)SD[18]. At the same time it should be recognized that in many poorer countries across the globe a structure for early childhood education and care is missing or weak at best. Although the situation is slightly more positive for professional, further and higher education, there too the infusion of ESD appears weak although progress seems to be made in higher education and teacher training (UNESCO, 2009a).

[18] See for more information: UNESCO 2008. The Contribution of Early Childhood Education to a Sustainable Society.

6.2 Featuring higher education and sustainable development, the case of African universities

Achieving sustainable development in Africa requires imagination, creativity, new knowledge development and various strategic contributions. It also requires the full participation of all those who are working and learning in Africa's education systems. The world's leading scientific bodies along with UNESCO and other key educational institutions which collaborate under the banner of the Ubuntu Commission, have identified Higher Education as a critical sector to work with in achieving the goals of Education for Sustainable Development. The role of Higher Education in sustainable development has been affirmed at a global level and also on the African continent (MESA 2008).

This is not a matter only affecting the African continent, and the challenges posed by the environment crisis and sustainable development are affecting universities around the world. Since 1992, there have been various initiatives, declarations, networks and alliances that have worked towards articulating what the implications of sustainable development are for university management, teaching, research and community engagement. More information on the state of ESD in higher education can be found in the *Journal of Sustainability in Higher Education* and a number of edited books on the topic.

6.3 Non-formal and Informal Education – a social learning perspective[19]

Perhaps most ESD activity around the world is generated not by formal government organisations but rather by NGOs who sometimes work with formal education systems but more often work in non-formal and informal learning settings. Informal and non-formal education tends to refer to the collective learning that takes place outside of formal educational systems in everyday life for instance in the context of families, work places, clubs, web-based communities, etc. Non-formal learning can be more or less structured and range from the learning occurring in study groups, non-governmental organizations, social movements, youth clubs, churches, folk high schools etc. Informal and non-formal education in all their forms is characterized by being voluntary, by active participation and by the reciprocal exchange of ideas. They are an important part of the concept of life long learning and occur everywhere, even at times within formal education and school systems[20].

Social learning is increasingly used to describe learning towards sustainability that takes place at the crossroads between formal, non-formal and informal learning between multiple stakeholders. Social learning refers to a special kind of learning that contributes to realising the learning society that is essential in realising a more sustainable world. Ideally, social learning is a way to create a 'learning system' in which people learn from, as a result of and with one another and collectively become more capable of withstanding setbacks, of dealing with insecurity, complexity and risks. Such a system needs people who not only accept one another's differences but are also able to put these differences to use. More and more often, 'social learning' is introduced in organisations and companies as a means to actively involve people in far-reaching processes of change (Bradbury, 2007; Cramer and Loeber, 2007; Lund-Thomsen, 2007). There are various ways to describe social learning, but it is essentially about bringing together people of various backgrounds and with different values, perspectives, knowledge and experiences, both from inside and outside the group or organisation, in order to come to a creative quest for answers to questions for which no ready-made solutions are available. Social learning is a process in which people are stimulated to reflect upon implicit assumptions and common frames of reference, this in order to create room for new perspectives and actions. The most important characteristics of social learning are:

[19] From the Acoustics of Social Learning by Wals, van der Hoeven and Blanken (2009)

[20] This definition can be found in the non-formal and informal learning section of the "The Gothenburg Recommendations on Education for Sustainable Development" which were adopted in Gothenburg, Sweden in November 2008. The declaration can be downloaded from: www.unescosweden.org/Bazment/Alias/Files/?Goteborgsrekommendationerna

- it is about learning from one another together,
- it is assumed that we can learn more from one another if we do not all think alike or act
- alike, in other words: we learn more in heterogeneous groups than we do in homogenous groups,
- it is about creating trust and social cohesion, precisely in order to become more accepting and to make use of the different ways in which people view the world,
- it is about creating 'ownership' with respect to both the learning process as well as the solutions that are found, which increases the chance that things will actually take place, and
- it is about collective meaning and sense making.

In some parts of the world, both in Western and Non-Western contexts, we see multi-stakeholder partnerships or 'vital coalitions' emerge that use social learning to co-create their own pathways towards sustainability. Sometimes terms such as 'community problem-solving' are used to describe this type of learning.

7. Conclusion

7.1 ESD implementation challenges and needs

The conflicts that emerge in the exploration of sustainable development, for instance, reveal the inevitable tensions among the Triple Ps (people, planet, profit) or the three Es (efficiency, environment, equity). From a learning perspective, these tensions are prerequisites rather than barriers to education (Wals, 2007a).

Despite the undeniable progress that has been made around the world, there still exist a number of common ESD implementation challenges including; the lack of financial and governmental support and coordination, the lack of a common understanding and awareness of ESD, the lack of ESD teacher training and the difficulty to evaluate ESD.

Complicated and heterogeneous educational system to integrate ESD; embedding ESD in a cross-curriculum approach; linking schools, community and society; highlighting the social and economic pillars of ESD; little awareness of ESD; no ESD common approaches; lack of research in ESD; the role of the media; putting more emphasis on non-formal and informal education; lack of ESD tools and materials; and the involvement of stakeholders (Wals 2009).

The kind of assistance needed corresponds with these challenges. Many countries need assistance in:

- Generating financial support earmarked for ESD;
- Reforming and re-orienting of educational contents, methodology and curricula to address ESD-based skills, knowledge, and values;
- Facilitating and strengthening networking between schools, educational institutions/organizations and other partners involved in ESD at a national and international level;
- Producing materials and tools in ESD;
- Improving legal and regulatory measures that support ESD;
- Designing ESD-professional development programmes and ESD-pre-service training programmes for teachers, educators, administrators and leaders;

- Establishing for deepening a national ESD strategy and develop commitment towards it;
- Exchanging good examples, and sharing knowledge and experience;
- romoting ESD research, monitoring, evaluation, and dissemination;
- Creating linkages between ESD and EE as well as with other emerging educations.

7.2 Ways forward

The Mid-DESD review has identified 10 major action areas for the second half of the DESD of which we will only present the ones that resonate the most with this report.

1) Awareness, meaning and scope of ESD

Limited awareness and understanding of ESD at all levels are still a fundamental challenge resulting in a limited societal and governmental support-base for ESD. This limited awareness and understanding may keep people from recognizing the presence and value of existing ESD, with activities taking place that may not carry an ESD label but which, in essence, constitute education and learning in the context of sustainable development. Efforts need to be made to better communicate ESD more creatively so that the full diversity of ESD and SD is fully understood. The involvement of the media needs to be strengthened (print-based and non-print/web-based) in communicating ESD and SD, and in creating (open-source) dialogues about ESD and SD among and between different audiences, particularly young people across the world.

Although there should be space for multiple interpretations and meanings of ESD, there is a common understanding that education and learning in the context of sustainable development cannot ignore the interconnections between the environmental, social, economic and cultural aspects of SD. Whereas many countries have a tradition in addressing the environmental dimension of sustainability and are quite comfortable in doing so, this is less the case so when it comes to the social, economic and cultural dimensions. During the remaining half of the DESD, multi-stakeholder dialogue among individuals and organisations that represent the economic, social and environmental aspects of SD should be encouraged.

2) Reorienting curricula, teaching and learning

As ESD-triggered innovations in teaching and learning are still in their early stages, there is a world-wide call for alternative methodologies that can strengthen people's SD-related capacities such as: understanding complexity; seeing connections and interdependencies; participating in democratic decision-making processes; and questioning dominant and long-accepted systems and routines that appear fundamentally unsustainable. Schools of education, curriculum development institutes and educational research organizations should be at the forefront of the search and development of these new forms of teaching and learning and the kinds of curricula, learning environments and school-community relationships that are needed to allow for such learning to flourish. At the same time, educational policies and support mechanisms that allow for more integrated forms of teaching and learning should be strengthened (see also Chapter 1.2).

3) Capacity-building

In the next few years, ESD-related professional development should also focus on how to build the capacities of teachers, managers and facilitators to initiate and enhance new ESD-inspired forms of learning in schools, universities, workplaces and neighbourhoods. Space needs to be created to develop and experiment with these new forms of teaching and learning. ESD should, possibly in connection with the rise of Corporate Social Responsibility (CSR), become an integral part in the training of leaders in business and industry. The latter has been little emphasized in the DESD so far, although ESD

appears to have made remarkable inroads in some areas of vocational education and training. Finally, capacity-building in multi-stakeholder social learning and the facilitating and strengthening of networking between schools, educational institutions/organisations and other potential partners in ESD at a local, national and international level appears crucial. Such capacity-building is also needed in non-formal education and informal learning settings.

4) ESD synergy with other 'adjectival' educations

In several regions, there is a call for the explicit articulation of the relationship between ESD and Environmental Education (EE) in order to create greater synergy between the two. The expected resulting process of reciprocal enrichment is to resolve existing tensions and is likely to contribute to an improved conceptualization and institutionalization of both. Similar synergies need to be created between ESD and other 'adjectival' educations such as: peace education, gender education, inclusive education, multicultural education, human rights education, HIV & AIDS education, global education, consumer education, holistic education, citizenship education, health education and development education (see also Chapter 2.3). During the remainder of the DESD, the creation networks that bring together key representatives from these SD-related educations should be stimulated.

5) ESD resources and materials

There is an acute lack of materials specifically designed to promote ESD. While some reference materials are available, many countries have to resort to documents that address general SD issues or resort to more traditional EE content and methods. The availability of ESD-specific methods and innovations in teaching and learning needs to be improved. The creation of accessible ESD knowledge-sharing platforms for multiple audiences using ICTs can help in making ESD resources available. Ideally, these resources should be available in multiple languages. At the same time, such resources need to be constantly reviewed, updated and improved. The creation of open-source, open-access resources for ESD (e.g. ESD wikis[21]) might be an attractive option for ESD resource-sharing and development.

6) International and regional cooperation

North-South and South-South cooperation

The way forward in all regions depends in part on the development and utilization of inter-and intra-regional networking. North-South collaboration will remain crucial but in the coming years, South-South collaboration and the associated sub-regional networking that takes place in the context of SD in general and ESD in particular would also need to be well supported. Currently, there are some powerful regionally networked ESD initiatives already taking place around the world which help promote and strengthen ESD at the national level. These networked initiatives need to be supported or initiated by active ESD focal points, ESD national coordinating bodies, UNESCO Regional Bureau for Education, UNESCO National Commissions and UNESCO Chairs, in collaboration with SD-oriented NGOs, the private sector and civil society organisations.

Regional Strategies for ESD

Even though the regions are positive about their Regional Strategies for ESD, it is evident that a periodic revitalization is necessary to maximize their impact. This will require an active involvement of all concerned stakeholders to fine-tune, monitor and evaluate the strategy. It is equally necessary to involve those stakeholders who have not contributed or endorsed the regional strategy for ESD. See also Chapter 5.4 on Regional Centres of Expertise.

[21] A wiki is a page or collection of Web pages. Wikis are designed to enable anyone who accesses them to contribute or modify content by using a simplified markup language.

Appendix 1 Overview of Research Groups and Networks

1. Networking for ESD

The ESD Programme has been closely collaborating with the Ubuntu Alliance – eleven of the world's foremost educational and scientific/technological institutions who signed the Ubuntu Declaration at the Johannesburg Summit in 2002 to: strengthen collaboration between science and technology researchers and educators; better integrate science and technology into educational programmes for sustainable development; and strengthen cooperation between formal and non-formal education[22].

Members of Ubuntu Alliance:
http://www.unu.edu/United Nations University
http://www.unesco.org/United Nations Educational, Scientific and Cultural Organization
International Association of Universities
Third World Academy of Sciences
African Academy of Science
Science Council of Asia
International Council for Science
World Federation of Engineering Organisations
Copernicus-Campus
Higher Education for Sustainable Development
University Leaders for a Sustainable Future

ProSPER.Net
The network for the Promotion of Sustainability in Postgraduate Education and Research (ProSPER.Net) is a network of several leading higher education institutions in Asia and the Pacific that have committed to work together to integrate Sustainable Development into postgraduate courses and curricula. Member institutions involved have strong education and research programmes in sustainable development and related fields.

The ProSPER.Net academic and research alliance is an effort of the ESD Programme at UNU-IAS to bring about understanding and delivery of ESD and SD at the postgraduate level. The creation of the network and implementation of joint activities are currently supported by the Japanese Ministry of the Environment[23].

For ESD articles and publications
http://www.ias.unu.edu/sub_page.aspx?catID=108&ddlID=186

2. ESD Research Hotspots

This is a sample list of organizations, universities or research institutes, which by no means is exhaustive. The centres mentioned have, in the last 5 years, build up a track record of studies, research, thesis work at the graduate level focusing on ESD-related research questions.

[22] http://www.ias.unu.edu/sub_page.aspx?catID=108&ddlID=184
[23] http://www.ias.unu.edu/sub_page.aspx?catID=108&ddlID=697

Africa	
Senegal	
Institute	UNESCO Office Dakar and Regional Bureau for Education
Focus	Assisting the region's Member States in the definition of strategies to further the development of their education policies.
Contact	Ann Therese Ndong-Jatta
Website	http://portal.unesco.org/geography/fr/ev.php-URL_ID=7268&URL_DO=DO_TOPIC&URL_SECTION=201.html
South Africa	
Institute	Rhodes University Environmental Education and Sustainability Unit
Focus	Research and capacity building in ESD research across the region
Contact	Heila Lotz-Sisitka, Murray and Roberts Chair of Environmental Education
E-mail	h.lotz@ru.ac.za
Zimbabwe	
Institute	University of Zimbabwe, Department of Teacher Education
Contact	Prof. Overson Shumba,
E-mail	dte@education.uz.ac.zw or oshumba@yahoo.co.uk

Asia-Pacific	
China	
Institute	The Chinese University of Hong Kong & Centre for University and School Partnership.
Focus	Teacher education, Chinese students
Contact	John Chi-kin Lee, Dean of the Faculty of Education and Professor in the Department of Curriculum and Instruction,
E-mail	jcklee@cuhk.edu.hk
Institute	Beijng Normal University
Focus	Environmental Awareness of Students in Primary and Middle Schools Education for Sustainability
Contact	Prof. Wang Min
E-mail	bnu.geowm@263.net
Japan	
Institute	Rikkyo University Rikkyo University Education for Sustainable Development Research Center
Focus	Helping to consolidate ESD in society
Contact	Prof. Osamu Abe
E-mail	esdrc@grp.rikkyo.ne.jp
Website	http://www.rikkyo.ac.jp/research/laboratory/ESD/eng/index.html
Lebanon	
Institute	UNESCO Office Beirut and Regional Bureau for Education
Focus	Assisting the region's Member States in the definition of strategies to further the development of their education policies.
E-mail	beirut@unesco.org
Website	http://www.unesco.org/en/beirut
Malaysia	
Institute	Global Centre for Sustainability Studies, Universiti Sains Malaysia
Focus	Roles of universities as regional centres of expertise

Asia-Pacific	
Contact	Dr Zainal Abidin Sanusi & Dr Hezri Adnan
E-mail	zainals@usm.my
Thailand	
Institute	UNESCO Office Bangkok and Regional Bureau for Education
Focus	Assisting the region's Member States in the definition of strategies to further the development of their education policies.
Contact	Derek Elias
E-mail	bangkok@unesco.org
Website	http://www.unescobkk.org/index.php?id=22

Latin America	
Brazil	
Institute	Paulo Freire Institute,
Contact	Moacir Gadotti
Website	http://www.paulofreire.org/
Barbados, Jamaica, Trinidad	
Institute	University of West Indies
Contact	Lorna Down and Marceline Collins-Figureroa
E-mail	lorna.down02@uwimona.edu.jm
Website	http://www.uwi.edu/
Chile	
Institute	UNESCO Office Santiago and Regional Bureau for Education
Focus	Assisting the region's Member States in the definition of strategies to further the development of their education policies.
Contact	Astrid Hollander
E-mail	bangkok@unesco.org
Website	http://www.unescobkk.org/index.php?id=22
Costa Rica	
Institute	University for Peace
Contact	Abelardo Brenes
E-mail	info@upeace.org
Website	http://www.upeace.org/
Mexico	
Institute	University of Guadalajara Institute for the Environment and Human Communities,
Focus	Research in ESD and women, ESD and higher education
Website	http://www.udg.mx
Institute	Social Research Institute, Universidad Autónoma de Nuevo León, Mexico
Contact	Edgar Gonzales Gaudiano, Researcher,
Website	http://www.uanl.mx/

3. UNESCO ESD Chairs as 'hotspots' on ESD Research

Ms Liudmila Balyasnikova, UNESCO Chair on Pedagogical Sciences, Herzen State Pedagogical University, Saint-Petersburg;

Ms Eliza Hernandez, UNESCO Chair in Environmental Education and Sustainable Development, National University of Distance Education;

Mr Abe Hirofumi, UNESCO Chair in Research and Education for Sustainable Development, Okayama University;

Mr Charles Hopkins, UNESCO Chair in and Education for Sustainable Development, York University, Toronto;

Mr Alexander Lunjev, UNESCO Chair Learning Society and Social Sustainable Development, Astrakhan State University;

Mr Vassilios Makrakis, UNESCO Chair in Information and Communication Technologies (ICTs) in Education for Sustainable Development, University of Crete, Rethymnon;

Ms Ingrid Pramling Samuelsson, UNESCO Chair in Early Childhood Education & Sustainable Development, University of Gothenburg;

Mr Arjen Wals, Professor, UNESCO Chair in Social Learning and Sustainable Development, Wageningen University, Department of Social Sciences

Mr John Holmberg, Professor, UNESCO Chair in Education for Sustainable Development; Chalmers University of Technology;

Prof. Konai Helu Thaman, UNESCO Chair in Teacher Education and Culture, University of the South Pacific, Fiji;

Dr Gerd Michelsen, UNESCO Chair in Higher Education for Sustainable Development, University of Lüneburg, Germany.

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Terms of Reference

Research overview: education for sustainable development

Background

In August, 2008, Sida invited tenders for a framework agreement regarding expertise in educational development. Hifab International AB has been commissioned by Sida for a twofold assignment: (a) To broaden and deepening the external expertise available for Sida; and (b) To strengthen the competence and capacity of Sida and the Swedish resource base in the field of educational development. A part of that assignment is to follow the research in the field of educational development and to provide Sida with research overviews twice a year and arrange seminars to share and disseminate research findings.

The second report, to be delivered in November 2009, shall cover research related to *education for sustainable development (ESD)*. The report shall contribute to competence development among Sida staff and partners and feed into and strengthen their current work in the field of ESD. ESD is one of the focus areas of Sweden's development cooperation in the education sector. Sida's portfolio in the field consists of support to:

- International training programme on ESD
- Southern African Development Community Regional Environmental Education Programme (SADC-REEP)
- Swedish International Centre of Education for Sustainable Development (SWEDESD)
- UNESCO
- Civil society organisations such as WWF working with ESD
- Components in sector programmes that focus on ESD

Mission

Hifab shall compile a research overview covering the following issues:

1 Definitions, traditions and concepts of ESD

Describe research covering context specific traditions and ways of working with ESD, comparisons between western settings and settings in Africa, Asia and Latin America shall be made. Pedagogical developments and the use of ICT shall be investigated. A historical perspective describing the development of traditions shall be applied.

2 Competences needed for contributing to sustainable development

Describe research findings on what kind of skills that are needed to contribute to sustainable development. Special attention shall be placed on skills in relation to leadership. Comparisons between western settings and settings in Africa, Asia and Latin America shall be made.

3 Inclusion and exclusion in relation to ESD

Describe research findings that deals with the relationship between ESD practice and processes of inclusion and exclusion. Special focus shall be placed on meaning making and identity in relation to ethnicity, gender, functionality, age, religion and sexual orientation. Comparisons between western settings and settings in Africa, Asia and Latin America shall be made.

4 Democracy in relation to ESD

Describe research that deals with the relation between ESD and democracy and human rights. Comparisons between western settings and settings in Africa, Asia and Latin America shall be made.

5 List the prominent research groups and recent research in the field of ESD, with an annotated bibliography.

Reporting

The Report should be aimed at a general professional readership, and technical details should be kept to a minimum needed to understand the findings and their significance in the context of education in development cooperation. The objective is to provide the reader with the concepts, and understandings needed for knowledge-based decisions and dialogue around education and sustainability with application in developing countries.

The report shall be made relevant to Sida staff. It shall focus on what works and what does not work, lessons learned and identify the challenges and tensions within this field of research. Furthermore, it shall focus on the context of development and development cooperation, drawing on lessons learned from educational development looking at factors for success or failure in the attempts to promote sustainability (formal as well as non-formal, with a life-long learning approach focusing not only on one level of education).

Hifab will consult the Swedish International Centre of Education for Sustainable Development during the mission.

The concepts of "research" is given a relatively broad interpretation, by "research" is meant both *basic research* (i.e., studies aiming to produce new general knowledge) and *applied research* (i.e., studies aiming at providing answers to specific questions in particular concrete situations). The basic research could include academic studies and surveys, cross-country analyses, and general policy analyses. The applied research could include background studies, situation analyses, and evaluations in connection with development projects and programs.

The research review shall focus to the extent possible on research carried out in developing countries or with special relevance to developing countries. But comparisons between findings in western settings and settings in Africa, Lain Amercia and Asia shall be made. Hifab shall aim to cover research done by researchers from Africa, Latin America and Asia.

A general summary of research findings will be provided, as well as a summary of problems and issues, lessons learned, and upcoming or planned issues for further discussion and research.

A written draft report shall be submitted to Sida no later than 16th of November 2009, Sida will then review the report and give feed back. After that Hifab will compile a second version no later then 25th of November 2009. The final report will be compiled after adding the conclusions from a workshop being held 4th of December. The final report shall be submitted to Sida no later then 1st of February 2010. The report shall contain a maximum of 30 pages plus appendices including a short summary.

Recent Sida Reviews

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Sida

2010:05 Cooperación financiera a la Fundación para la Promoción del Desarrollo Local (PRODEL) en Nicaragua
Mateo G. Cabello
Sida

2010:06 Cooperación Financiera al Fideicomiso para el Desarrollo Local (FDLG) en Guatemala
Mateo G. Cabello
Sida

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Hilmy Sally
Sida

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Lars Florin, Robert Gustafson, Viktoria Hildenwall, Lars Oscár
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Sida

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Phyllis Freeman, Eva Johansson, Jerker Thorvaldsson
Sida

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Sida

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EDUCATION FOR SUSTAINABLE DEVELOPMENT

Research Overview

This paper outlines some of the main characteristics of Education for Sustainable Development (ESD), particularly in the context of 'development' and 'globalization'. It addresses the various interpretations and meanings of ESD, shows how these relate environmental education and emerging educations that overlap with SD-issues and introduces sustainability competence as a key outcome of ESD. The paper also outlines some regional trends that affect the way ESD manifests itself in the various countries and regions around the world. Some key developments affecting ESD are introduced, including globalization, the rise of the information and knowledge society, the utilization of diversity and the need for the inclusion of marginalized groups and perspectives.

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