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National Journeys

towards Education for Sustainable Development

2013

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2013

Reviewing National ESD Experiences from

- COSTA RICA
- MOROCCO
- SOUTH AFRICA
- SWEDEN
- VIET NAM

About this publication

This publication has sourced information from a series of national reviews commissioned by UNESCO in 2011/2012 and was written by experts in Costa Rica, Morocco, South Africa, Sweden and Viet Nam. The countries presented in this report are not necessarily the 'best' examples of the region, as many other countries are also progressing effectively towards implementing Education for Sustainable Development (ESD). Rather, the countries selected illustrate the wide diversity of ESD approaches and initiatives taking place in different parts of the world. The national studies were then edited and harmonized before common themes and lessons learnt were identified to support other national efforts in moving towards the end of the UN Decade of Education for Sustainable Development.

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Executive Summary

As the lead agency for the UN Decade of Education for Sustainable Development (DESD, 2005-2014), UNESCO supports education policy makers and teacher educators in Member States to integrate Education for Sustainable Development (ESD) into national education systems. One important activity is sharing good examples of ESD practice.

The *National Journeys towards Education for Sustainable Development*, from five UNESCO world regions, document how different countries use learning and education to address sustainability challenges. Each journey gives concrete examples of ESD in practice in different sectors of society.

The 2013 edition of *National Journeys towards Education for Sustainable Development* showcases ESD in Costa Rica, Morocco, South Africa, Sweden and Viet Nam. What does the policy context for ESD look like in these countries? How is ESD integrated into primary, secondary, higher and non-formal education? What are concrete and good ESD examples in these areas? What roles do civil society and the private sector play? The publication addresses these questions, summarizes findings and identifies lessons learnt in order to support other UNESCO Member States on their own journey towards ESD.

Findings

- Political support from the national government is vital for driving ESD processes. Having an institutional and legal framework and a national strategy to implement ESD is also necessary for an efficient implementation of ESD at the country level.
- A central coordinating body that can ensure the collaboration of all stakeholders and oversee a coherent ESD strategy is important for effective ESD implementation.
- Participatory approaches to ESD are important for fostering ESD. In particular, approaches that include teachers, teacher trainers, researchers and various stakeholders ranging from the smallest communities up to the national level have proven to be successful.

- Research and monitoring and evaluation of ESD help drive ESD progress on the national level.
- ESD is a multi-stakeholder endeavour. The extension of ESD to all levels of education requires collaboration of different stakeholders, including from the non-formal education sector and civil society. Effective bottom-up approaches can encourage governments to upscale and implement them on the national level.

Looking ahead

- In addition to the importance of further strengthening ESD policy, an important recommendation for the way forward in successful ESD implementation is allocating sufficient financial resources. More funds and international collaboration for the nationwide implementation of an effective sustainable development (SD) culture should be requested.
- ESD should be further integrated into teacher education to foster quality education and ESD. In order for teachers to effectively teach ESD, they need to understand the multi-dimensional character of local and global SD and to learn the basic methods for teaching ESD, as well as for evaluating, prioritising and deciding on SD issues.
- Monitoring and assessment processes for ESD need to be developed and implemented. While much effort has been put into designing learning opportunities for ESD, and integrating and mainstreaming ESD across sectors and disciplines, more attention now needs to be paid to developing monitoring and assessment processes for ESD learning.
- Information and communication technologies (ICT), social networking and mobile communications should be explored as platforms for ESD learning. Today, ICT are seen as tools that can effectively support the innovation of teaching, learning and education management, and contribute to improving the efficiency and quality of education. This includes ESD.
- The number of academic and research programmes on ESD should be increased.
- The case studies also highlight the importance of promoting partnerships for ESD, involving active NGOs further and supporting university networks for the development of ESD.

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Introduction

"Education is the most powerful path to sustainability. Economic and technological solutions, political regulations or financial incentives are not enough. We need a fundamental change in the way we think and act."

(Irina Bokova, Director-General of UNESCO).

By declaring 2005-2014 the United Nations Decade of Education for Sustainable Development (DESD), the UN General Assembly has not only acknowledged the crucial role of education for building a sustainable future, but has taken on an ambitious task. As lead agency of the Decade, UNESCO promotes the inclusion of key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction and sustainable consumption. It fosters the use of participatory teaching and learning methods that motivate and empower learners to change their behaviour and to take action for sustainable development.

The Decade provides an overall framework for supporting required changes to make education relevant today.

Given the complexity of local and national environmental contexts, and the complexity of people's social and economic conditions, pathways to sustainable societies are not straightforward. The *National Journeys towards Education for Sustainable Development* aim to document how different societies use learning and education to address sustainability challenges. They give concrete examples of ESD in practice in different sections of society.

Further to the countries showcased in the 2011 issue (Chile, Indonesia, Kenya, the Netherlands and Oman), the 2013 edition demonstrates how a further five countries from different UNESCO regions have dealt with ESD. It showcases ESD in Costa Rica, Morocco, South Africa, Sweden and Viet Nam. The publication also summarizes findings and identifies lessons learnt in order to support other UNESCO Member States on their own journey towards ESD.

Reviewing National ESD Experiences

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COSTA RICA

Abelardo Brenes

1. Introduction

Over the years, Costa Rica has achieved a positive reputation and image as a leader in peace, a country whose military establishment gave way to democratic governance, and which is successful in conserving a substantial portion of its natural resources while ensuring the integrity of its territory. However, there are signs that the model of socio-economic development that the country is pursuing is unsustainable and that consumerism is strongly ingrained in the collective mind-set of many Costa Ricans. Can Costa Rica provide an alternative model, one that supports sustainable development (SD)? What role can and should education for

sustainable development (ESD) play in making this possible? This case study report aims to answer some of these questions by illustrating many of the actions that have been undertaken so far in the field of environmental education (EE) and education for sustainable development, which are embedded, for the most part, in policies and processes concerning other domains of society.

2. Background

Historical Synthesis of Environmental Education in Costa Rica

In Costa Rica, ESD emerged from a long tradition of environmental education (EE). Guier Serrano, Rodríguez Morales, and Zúñiga Chaves (2009) identify the year 1969 as a useful starting point to begin this history, it being the year when the Forest Law was proclaimed and the National Park Service was created.

After 1972, Costa Rica participated in many of the international and regional forums on environmental education that took place after the 1972 United Nations Conference on the Human Environment, held in Stockholm.

In the years 1987 and 1988, the concept of SD began to be used. Two projects for promoting SD were developed in Costa Rica during that period: a) the National Strategy for Conservation and Sustainable Development (ECODES) and the Master Plan on Environmental Education for Costa Rica.

The Master Plan recommended the creation of a National Commission on Environmental Education (CONEA), which was established by an executive decree in 1988 and which had, as its purpose, the implementation of the proposals of the Master Plan. Although the Commission did not have sufficient political and institutional support, there were spin-offs such as the Sub-commission on University and Environment (SUMA), which was later transformed into the Inter-University Commission on Environmental Education (CIEA).

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In all four public universities of Costa Rica – Universidad de Costa Rica (UCR), Universidad Nacional (UNA), Instituto Tecnológico de Costa Rica (ITCR) and Universidad

Estatal a Distancia (UNED) – research and analysis of the environmental situation were undertaken, sometimes independently and sometimes jointly. The environment became a priority theme in all areas (e. g. health sciences, social sciences, education sciences, technology), in addition to the areas that were traditionally dedicated to the study of the environment.

The Ministry of Public Education

In 1995, during the Government of José Figueres, an Environmental Management Office was created in the Ministry of Public Education (MEP) which was attached to the Office of the Minister of Education. Under the influence of Agenda 21 and the commitments made by the Government of Costa Rica in the area of SD, the Educational Policy towards the XXI Century was proclaimed. SINADES (the National System for Sustainable Development) was created in 1994 and committees for sustainable development were established in all government offices. Public officials were trained in SD and quality of life issues and approaches. It was a paradigm shift. Environment clubs were set up in schools. It was also the period when the national consultation on The Earth Charter (TEC) began, which was carried out in many sectors. Pedagogical texts on SD for the first (grades 1-3) and second (grades 4-6) cycles of primary education were elaborated. In 1999, when the Environmental Management Office was closed, activities in environmental education (EE) were carried out only by the National Advisor on EE. As of 1999, the SD paradigm was no longer spoken of because it was associated with the José Figueres Administration (1994-1998) and the *Liberación Nacional* political party.

In 2001, the Office of EE was created (Administration of Miguel Angel Rodríguez, 1998-2002). Between 2002 and 2004, the phrase that was used in the curriculum to refer to education for SD was 'environmental culture for SD', as a transversal axis.

Then, under the Administration of Abel Pacheco (2002-2006), the Office of Environmental Education was weakened and placed outside of the Division of Curriculum Development. Importance was now being given to the Ecological Blue Banner Programme (EBBP), both by the Presidency and the Ministry of Education. During the Administration of Oscar Arias (2006-2008), the Peace with Nature Initiative became the main SD policy framework. Teachers worked once again in ESD and The Earth Charter (TEC) was considered to be a significant SD framework.

Methodology

Site visits to organizations and projects have been one of the main methods of data gathering for this case study report. Visits were also made to the Division of Student Life (DSL), the Division of Curricular Development (DCD), and to the Department of Inter-cultural Education (DICE) of the Ministry of Education. In addition, three schools participating in the Ecological Blue Banner for Schools Programme (EBBSP)

were visited, as well as the Ministry of Environment (MINAET), in particular the CONEA, the National Meteorological Institute (NMI) and the Division for Climate Change (DCC). Moreover, visits were made to the State of the Nation Programme (SNP), the Earth Charter Centre for Education in Sustainable Development at the University for Peace (ECCESDUP), the Private Enterprise Association for Development (AED), and INBio. Whenever possible, information was validated through triangulation methods. Analysis of reports and Internet-based information was another method used.

3. National Review

The International Policy Context for ESD Policy in Costa Rica

On 17 October 2006 the Government of Costa Rica publicly proclaimed the *National Commitment on the 'Decade on Education for Sustainable Development (DESD)'*.[1] It was signed by the President and all the ministers.

From 31 October to 2 November 2006, a conference entitled Building an Education for Sustainable Development in Latin America and the Caribbean was held in San José, Costa Rica. Its purpose was to give impulse to activities within the framework of the DESD at the regional level. The conference was organized by UNESCO and the ECCESDUP. One of the main goals was to consensually design a Latin American and Caribbean Regional Strategy for ESD. The Strategy was published in March 2007.[2]

Parallel to the National Commitment on the DESD, President Oscar Arias launched his own Presidential Initiative of Peace with Nature (Arias Sánchez, 2006). It requires Costa Rica to prepare work agendas, both of national and international scope, focusing on the goal of achieving environmental sustainability with a view to maintaining and restoring the ecosystems that make life on Earth possible. Henceforth the National Commitment on the DESD and the Peace with Nature initiative were merged into a single policy framework.

1 Available in English at http://www.earthcharterinaction.org/invent/images/uploads/Costa%20Rican%20National%20Commitment%20DESD.pdf

2 A report of the conference and the strategy are available at http://www.earthcharterinaction.org/invent/details.php?id=312

ESD Policy Framework of the Chinchilla Miranda Administration (2010-2014)

The national policy framework in matters related to SD and ESD of the current Administration of President Laura Chinchilla is expressed in the National Development Plan 2011-2014, published in December 2010.3 Key passages relevant for ESD policy are:

"The Government of the Republic has initiated its strategic plan to 2014 with the goal of supporting sustainable human development, consolidating past achievements and potentiating new advances." (p. 3)

"The National Development Plan 2011-2014 plans actions to advance towards a secure development guided by innovation, science, and technology, strengthened by solidarity and committed to environmental sustainability. The route for this development is based on national and sectorial proposals." (p. 5)

In the area of education, the plan places most emphasis on improving secondary education (grades 7-11), technical and vocational education, computer literacy, and learning a second language, particularly English. These goals have been emphasised in an effort to make the country as productive as possible and to improve opportunities for the current youth population.

The only specific reference to ESD is found in an annex on p. 176, mentioning the Programme to Strengthen Education for SD and a Healthy Life. The specific goal stated here concerns the promotion of SD and a healthy life in student populations, with the objective that by 2014 50% of the educational centres in Costa Rica will be participating in the Ecological Blue Banner for Schools Programme (EBBPS). The programme, which is under the responsibility of the Ministry of Education, started with a baseline of 10% (301 schools). However, this does not mean that these are the only current policies related to ESD and EE in Costa Rica. In fact, if a broad approach towards ESD is taken, it will be found that many governmental policies that promote SD have an educational dimension.

ESD Activities in Primary and Secondary School

All Costa Rican formal education policies are nationwide. They are approved by the Supreme Educational Council (SEC) and are implemented by the Ministry of Public Education (MEP). The MEP is a complex organization composed of approximately 73,000 employees, who attend to the educational needs of nearly 900,000 students in 4,518 educational centres.

3 The plan is available at: http://documentos.mideplan.go.cr/alfresco/d/d/workspace/SpacesStore/122fcd1c-53a7-47a7-a0ad-84cac6f1d7b9/PND-2011-2014-Maria-Teresa-Obregon-Zamora.pdf

As of April 2011, Decree No. 36451-MEP defines that the theme of ESD is under the responsibility of the Division of Student Life (DSL), within the area of Health and Environment. Before, ESD was placed within the Division of Curriculum Development (DCD). The DSL now coordinates all extra-curricular themes referring to 'knowing how to live' and 'knowing how to live together'. These themes are still taught in the curricular subject areas. In addition to the Health and Environment area, the DSL develops activities in such areas as student government, student community service, arts for living together, the Student Arts Festival and the 'School in Our Hands' programme which promotes commitment to the school and sports activities.

At present, the Ecological Blue Banner Programme for Schools (EBBPS) is the main ESD programme that the MEP is consolidating. This programme is also a component of the broader Ecological Blue Banner Programme (EBBP), which is featured in the National Development Plan with regard to the following SD policies: a) Costa Rica is to be carbon neutral by the year 2021; b) proper management of waste is paramount; c) social-environmental projects are to be given priority; d) saving of energy and water (these themes are related to the parameters for evaluating the EBBP); and e) requirement for clean and safe spaces, including adequate restroom facilities.

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In coordination with the Division of Student Life, the science advisors in the 27 regional divisions are responsible for orienting the EBBPS. Under the Programme, every participating school creates a local committee for environmental management and encourages a high degree of student participation. There has been much interest on the part of students to get involved in environmental issues. In 2010, 631 educational institutions participated, of which 68% received the Ecological Blue Banner (EBB).

In 2010, 631 educational institutions participated in the Ecological Blue Banner Programme for Schools. Sixty-eight per cent received the Ecological Blue Banner.

There is an advantage to locating programmes such as the EBBPS within the DSL: they have more flexibility because they do not have to follow curricula. They do, however, coordinate with the DCD with respect to the four transversal themes for developing an environmental culture for sustainable development, as defined in 2004: a) environmental culture for SD; b) integral education on sexuality; c) education for health; and d) experience of human rights for democracy and peace.

An Ecological Blue Banner School: Escuela República de Haití

The República de Haití School, founded in 1908, is a large urban public school in a low socio-economic area of San José, located in San Sebastían de Paso Ancho. It has 1,500 students (divided into two shifts) and 60 teachers. It has been awarded the Ecological Blue Banner every year and currently holds the highest award (four stars). In 2006 it won a contest for innovative education in Costa Rica. With the support of the Japan International Cooperation Agency (JICA) and other organisations, the school has developed several interesting projects.

Sixth grade teacher Dunia Bran, who is the tutor in agriculture, explained that the school has had an environmental focus even before getting involved in the Ecological Blue Banner School Programme. They had begun this work by painting ecological murals throughout the whole school on themes dedicated to the indigenous people of Costa Rica, the main species of the country's flora and fauna, and volcanoes.

Each classroom prepares independently for the EBBSP evaluation. There are four EBBSP committees, each with a particular focus: a) recycling: with their own sorting and storage centre; the community is encouraged to participate by bringing in plastics, cardboard and aluminium which they can then sell; b) classroom compliance with EBBSP standards; c) a campaign for clean corridors; and d) reforestation of the school grounds and surrounding community. The school is also implementing measures to save energy and water to comply with national policies for climate change mitigation. In the restrooms the emphasis is placed on hygiene. The school has also transformed a wasteland into a vegetable garden, with an open-air butterfly farm, and planted trees.

Environmental Secondary Schools

The MEP has created a variety of secondary schools that emphasise particular fields of study: scientific, humanistic, artistic and environmental. Currently there are five environmental secondary schools in Costa Rica. One of these is CEUNA, located in an urban setting in Heredia. It is a private school set-up in 1996 with initial support from UNA. Offering both primary and secondary education, the school has fully embraced the ESD paradigm and has made wide use of the Earth Charter (TEC). Whereas the EBBSP tends to emphasise recycling, reusing and the using of fewer resources, CEUNA goes further and stresses the importance of eliminating unnecessary consumption altogether. CEUNA has also integrated local conservation efforts for the transformation of some terrain into a secondary forest, demonstrating national and global sustainability challenges. Students and teachers use recycled materials to create their didactic tools and also experiment with alternative energy

sources such as solar ovens to cook their meals. In addition, students develop critical perspectives on local, national and global sustainable development challenges. At this year's ecological fair, for example, the theme was mining. This was a major issue in public opinion during 2010-2011 due to the conflict concerning the *Las Crucitas* gold mining concession. Despite the valuable contribution that environmental schools have made, officials at MEP indicate that education policy will no longer actively promote these schools, preferring to focus on the EBBSP instead.

Education for Sustainable Development Regional Course (CREADS)

While the EBBSP is more focused on the environmental management of schools, an attempt was made in the former administration to develop a programme focusing on ESD. An Education and Communication Committee coordinated by the Ministry of Public Education defined an action plan, with the general objective 'to promote, with a new ethic, the development of formal, non-formal and informal educational processes that would generate changes on the environmental behaviour of the Costa Rican population'. Many actions were proposed, but due to funding limitations one project was prioritised: the development of a regional teacher training course on environmental education for sustainable development, called CREADS (Jiménez-Elizondo, 2010, pp. 227-34).

ICT in Education

In the 1980s, Costa Rica began incorporating information and communication technologies (ICT) into its educational system, with the idea to eventually integrate them into the whole of the educational system. The initiative includes four areas:

1. The Programme of Educational ICT of the Omar Dengo Foundation (FOD),[4] initiated in 1988, whose goal is to develop cognitive and social competencies through the use of ICT. It currently benefits approximately half of the national student population, from pre-school to secondary school. It gives priority to educational centres located in low socio-economic and rural areas.

2. ICT as a didactic set of tools, for use by teachers and students. The Centre of On-line Pedagogical Resources (CRPL), developed jointly by the MEP and FOD, currently makes such resources available for use in schools throughout the country.[5]

3. The certification of competencies in the use of ICT for students, teachers, and administrative staff.

4 http://www.fod.ac.cr/

5 http://aplicaciones02.fod.ac.cr/centrorecursos/

4. The use of ICT in administrative management functions of educational centres and the overall administration of the MEP.

The MEP promotes several other portals for interactive learning and access to educational resources. These include Educ@Tico,[6] which provides a means for teachers and students to share innovative educational practices. The MEP also encourages teachers and students to participate in the Latin American Network of Educational Portals[7] and in the portal for the Central American and Dominican Republic Educational Community,[8] which offers a virtual campus and facilitates the creation of virtual communities (Mora Rodríguez, 2010, pp. 92-4).

Policies for Rural Schools

In order to meet the challenge of providing quality education to rural children and young people, the MEP has designed a new policy for grades 1 to 9 (known as the Basic General Education, cycles 1 to 3). This new model is called the Rural Secondary School[9] and was piloted in 18 rural communities. These schools may have up to 100 students and employ several teachers. Parents and other community members are also encouraged to become involved in pedagogical activities. The rationale is to offer students an academic and technical education as well as opportunities to become involved in personal, social and productive projects that meet educational goals, while helping to satisfy communal needs and to strengthen the students' sense of community belonging.

Between 2006 and 2010 an effort was made to provide Internet connectivity and educational resources through the Internet, via satellite, to 168 rural schools, including those situated in indigenous territories.

Between 2006 and 2010 an effort was made to provide Internet connectivity and educational resources through the Internet, via satellite, to 168 rural schools, including those situated in indigenous territories. Some of these schools have also received solar panels to compensate for the lack of other sources of electricity. (Mora Rodríguez, 2010, pp. 125-6, 136)

Policies on Intercultural Education

Over the last few decades Costa Rica has gone through a process leading to greater recognition and appreciation of its ethnic and cultural diversity. Besides the large

6 http://www.educatico.ed.cr/default.aspx
7 http://www.relpe.org/
8 http://www.ceducar.org/CEDUCAR/index.php
9 http://www.ceducar.org

mestizo population, there are various indigenous groups, Afro-Caribbeans, and large contingents of migrants, especially from Nicaragua. In 1994 the Legislative Assembly passed the 'Law of the Day of the Cultures', which explicitly acknowledged the multi-ethnic and pluri-cultural nature of the country and the role that the MEP should play in adapting study plans to this reality. However, it was not until 2008, when the **First Conference on Inter-cultural Education** was held with the participation of diverse educational communities, that the MEP was given this responsibility. The MEP has thus started to adapt the study plans, bearing in mind the need to protect cultural pluralism and stressing a new sense of historical identity that promotes unity within diversity.

An MEP decree calls for the creation of indigenous educational circuits. As a result, the Regional Sula Division of Education in indigenous territories of the province of Limón was set up and the Department of Indigenous Education was restructured.

Another outcome of that conference was an action plan which was financed by a loan from the World Bank. The plan includes four action areas that are currently being addressed:

- The implementation of regulatory reforms to provide the technical, logistical and financial resources necessary for developing indigenous education.
- Within the MEP, the dissemination of the normative framework for indigenous education.
- The creation of a new curriculum that responds to the needs of indigenous communities and that combines elements of the national curriculum with cultural content of diverse indigenous groups at all educational levels and in all subjects, using mother-tongue languages.
- The production of pedagogical materials required for inter-cultural education and the formation of the human resources required for teaching with an intercultural approach. (Mora Rodríguez, 2010, pp. 84-5).

Higher Education

The four public universities in Costa Rica jointly constitute the National Council of Rectors (CONARE). The role of CONARE is to coordinate the activities of public university learning in the country. It carries out its work through commissions which integrate representatives of each institution. Due to space limitations, only some of their key joint activities in ESD and EE will be described here.

As already explained, the four public universities created a sub-commission for environmental education in 1988, which was later transformed into the Inter-University Commission on Environmental Education (CIEA) in 1994. Its mission is to further introduce EE and strengthen the environmental dimension of the

activities of Costa Rican public universities. It is engaged in permanent educational activities for academics and in the dissemination of publications (its own and those of others) in order to facilitate EE and its inclusion in the curriculum. According to research conducted by Salmerón Alpízar (2011), 50% of the academic study programmes of the Universidad de Costa Rica and the Universidad Nacional include an environmental dimension; in the Universidad Estatal a Distancia the percentage is 26% and in the Instituto Tecnológico de Costa Rica it is 65%.

The Inter-University Commission has promoted the development of alliances with people active in the field and has had an impact on decision-makers. It has developed quality didactic material and carried out diverse environmental research projects. Examples of Inter-University Commission activities are:

The State of the Nation Programme (SNP)[10] is a research programme on sustainable human development which also serves training purposes. It provides relevant information not only for creating public policies but also for developing critical opinion in civil society on strategic themes for sustainable human development in Costa Rica and in Central America.

The Programme operates within the institutional framework of CONARE and under the responsibility of the Human Rights Ombudsman of Costa Rica (*Defensoría de los Habitantes*), with the support of various patrons. Its main purpose is to provide instruments to society that are easily accessible and teach about the evolution of sustainable human development in Costa Rica, and which can provide a basis for democratic accountability to strengthen mechanisms of participation, negotiation and to contribute to the formation of national consensus.

The programme also produces the yearly report, *State of the Nation*. The report provides a system for monitoring and evaluating sustainable human development in Costa Rica in four areas: a) equity and social integration; b) opportunities, stability and the state of the economy; c) harmony with nature; and d) strength of democracy (Hernández Rojas et al., 2006). In 2012, the 18th edition of the Report was published.

The Programme also publishes didactic modules for use in primary and secondary Education,[11] as well as in non-formal education.[12] It disseminates information and carries out training activities for different target groups: decision-makers, international organizations, the academic community, the media, the education sector and civil society.

10 http://www.estadonacion.or.cr/index.php/quienes-somos

11 These can be downloaded from http://www.estadonacion.or.cr/index.php/apoyo-educativo/materiales-didacticos

12 These can be accessed at http://www.estadonacion.or.cr/index.php/capacitacion/materiales-pedagogicos/modulos.

Furthermore, the Programme provides financial support for projects, such as the 'Improvement of the Educational Offering in Urban and Rural Environmental Management (MOE-GAUR)' project.

CIEA has also created a Virtual Community for Environmental Learning (VCEL)[13], promoting the integration of EE into university curricula and promoting academic exchange among faculty, students and the administration.

Through the environmental management of their campuses, universities are also trying to teach environmental education by example.

Besides the four public universities, there are 52 private universities in Costa Rica and also a substantial number of para-universities. In 2009, a group of 14 leading public and private institutions of higher learning in Costa Rica created a Network of Sustainable Institutions of Higher Education (REDIES). The goal of REDIES is to commit educational institutions to achieving sustainability on their campuses and in neighbouring communities. An important part of this effort is developing strategic alliances in the field of sustainability for the exchange of experiences and technical expertise. REDIES has furthermore established minimum standards and indicators of environmental performance thus providing an operational definition of what a 'green campus' means. The indicators taken into consideration include consumption of water, treatment of residual water, management of solid waste, consumption of electricity, carbon footprint, environmental management and green shopping.

Two private universities specialise in education for sustainable development: EARTH and the University for International Cooperation.

EARTH[14] is a non-profit, private, international university dedicated to education in the agricultural sciences and natural resource management and contributes to sustainable development in the tropics. It focuses on the teaching and training of professionals so that they can develop the knowledge, skills and attitudes and values that will enable them to integrate social and environmental concerns into production.

The **University for International Cooperation** (UCI)[15] promotes the principles of sustainable development and social responsibility in a transversal way through a variety of postgraduate programmes and other academic activities. One of the goals of the University is to ensure that concerns related to the conservation of eco-systems and overcoming poverty are put on the agendas of decision-makers of national and international organizations in the Latin American and Caribbean region. In 2010,

13 http://comunidad.inie.ucr.ac.cr/

14 http://www.earth.ac.cr/

15 http://www.uci.ac.cr/

UCI worked on the development of framework legislation on climate change for the Latin American Parliament.

Technical and Vocational Education and Training

Technical and vocational education and training (TVET) has been given high priority in recent years. TVET is available at either professional and technical secondary schools, which provide a variety of specialisations over a period of six years, or at conventional academic secondary schools, which provide a bachelor's degree in five years. There is also a specialised National Learning Institute (INA) which provides technical and professional training in a variety of areas and through different modalities.

The MEP has developed TVET through multiple alliances with the private sector, adapted it to local needs and stressed the importance of stimulating entrepreneurship. Technical and professional secondary schools offer both basic academic courses (like those in academic secondary schools) and diverse possibilities for technical and professional specialization, so that graduates can directly join the workforce or go on to university. As Costa Rica has increased and diversified its productive capacity, the need to train specialists who can work in new technological production sectors and services, such as tourism, commerce, finance, health and education, has been an impetus for the development of new areas of vocational and technological education.

A new Educational Model Based on Competences (EBNC) seeks to offer students an integral training programme while at the same time developing their capability for working flexibly in specific productive contexts. Many of the programmes are coordinated with the National Institute of Learning (INA).

INA[16] has explicit policies related to education for sustainable development and environmental education. The Strategic Plan for 2011-2014 includes the following policies: to offer Professional Training and Training Services that are innovative, creative, flexible, inclusive and that integrate the perspectives of rights, gender and environmental

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16 www.ina.ac.cr

sustainability. Also, to implement strategies at the institutional level for environmental sustainability in all of its action areas, applying a perspective of continuous improvement and promoting the efficient utilisation of natural resources, and to contribute to national development that is in harmony with the environment.

INA also seeks to develop and implement technical and administrative plans and projects to create the basis for an institutional model of environmental sustainability (saving energy, water, fuel and telephone use, among others). It promotes the application of technological resources that favour sustainable development in diverse productive sectors and incorporates topics on environmental sustainability in the design and execution of the Professional Training and Training Services programme.

Non-Formal Governmental Environmental Education

Ministry of Environment (MINAET)

The development of non-formal environmental education is significantly related to the National System of Protected Areas. In the 1980s, the Ministry of Environment (MINAET) started a project on Environmental Education for Endangered Species, carried out in collaboration with the MEP, the Organization for Tropical Studies (OET), UNED and UNA. Other educational efforts were focused on the situation of marine turtles in the Caribbean.

The creation of the National System of Areas of Conservation (SINAC) in 1995 brought together the National Parks Division, the Forest Division and the Wildlife Division and formalised environmental education. Under the Administration of Chinchilla Miranda (2010-2014), CONEA's role as coordinator of formal and non-formal environmental education in all of Costa Rica has been reaffirmed.

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CONEA was active during 2011 and it is expected that there will be an effective national coordination of environmental education and that a National Plan for

EE will be ready by 2012. However, CONEA's approach is more oriented towards environmental education than education for sustainable development.

National Strategy on Climate Change

In 2009, MINAET formulated the National Strategy for Climate Change[17] and in 2010 created a Division for Climate Change. In addition, the National Meteorological Institute, which is also part of the MINAET, works on climate change policy and education.[18]

The national climate change agenda focuses on two action areas: mitigation and adaptation. Activities in these areas have been dedicated to awareness building for the general population, including educators, and bringing about a change of culture regarding climate change. They include workshops with diverse groups, such as cooperatives, educators and corporations. The priority is not to compensate for emissions, but to achieve emission reductions and carbon neutrality. The workshops include one hour of theory and half an hour of practical exercises. Topics include: a) the concept of carbon neutrality; b) metrics (all indicators and measurements of actions that are measurable can be reported and verified); and c) measurement of the carbon footprint. All these activities emphasise participation, consultation and consensus-building, and aim to bring people to share their experiences.

The MINAET is currently working on a plan to implement the National Strategy for Climate Change, following the three criteria of participation, consultation and consensus-building, based on three steps for reaching carbon neutrality: implementing institutional environmental management plans for public officials, introducing a norm to determine carbon neutrality for the private sector and developing the Ecological Blue Banner Programme.

The Strategy aims to support achieving carbon neutrality in Costa Rica by 2021.

In 2010, Costa Rica passed a "Law for the Integrated Management of Residues". It includes a call for the creation of a National Programme on Education for the Integrated Management of Residues for both formal and non-formal education.

Non-Governmental Organizations and Civil Society

Many non-governmental organizations (NGOs) operating in Costa Rica and other components of civil society carry out education for sustainable development and environmental education activities. These can be roughly categorized according

17 Available at http://cglobal.imn.ac.cr/sites/default/files/documentos/estrategia_nacional_de_cambio_climatico.pdf.

18 http://www.imn.ac.cr/

to their primary agenda: educational, conservationist/scientific, corporate social responsibility, sustainable rural tourism, activism for environmental and social justice and awareness raising. Examples of some key NGOs and other civil society players in each category are highlighted below.

Earth Charter Centre for Education for Sustainable Development (ECCESDUP)[19]

The Earth Charter Initiative (ECI), whose mission is to promote the transition to sustainable ways of living and a global society, founded on a shared ethical framework that includes respect and care for the community of life, ecological integrity, universal human rights, respect for diversity, economic justice, democracy and a culture of peace, houses its Secretariat at the United Nations affiliated University for Peace (UPEACE, http://www.upeace.org/). The Earth Charter Centre of Education for Sustainable Development (ECCESDUP) of the ECI is based at the Costa Rica campus of UPEACE, with which it has a formal strategic partnership.

The ECI and Centre have carried out ESD activities specifically adapted for Costa Rica, some of which also provide an experimental development context that can be offered internationally through the Initiative's broad network of affiliates and supporters. The work done by the ECI and Centre in Costa Rica, within the context of the UN Decade of Education for Sustainable Development (DESD), includes the development of didactic modules for students and teachers of the second cycle of basic general education (grades 4-6) and a calendar featuring Earth Charter based learning activities.[20] 35,000 copies of the teacher's module, 100,000 copies of the student's module and 11,000 calendars were printed. Training workshops in the use of the modules were held in 2005-2006 throughout Costa Rica. The modules have been disseminated internationally, translated into English and Portuguese, and adapted for use in other countries.

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19 http://www.earthcharterinaction.org/content/

20 Information on these publications is available at http://www.earthcharterinaction.org/invent/images/uploads/1Proyecto%20Colaborativo%20-%20Costa%20Rica.pdf. The texts can be downloaded at http://www.earthcharterinaction.org/invent/details.php?id = 263.

National Biodiversity Institute of Costa Rica (INbio)

The National Biodiversity Institute of Costa Rica (INBio)[21] is a non-governmental, non-profit, public interest research and biodiversity management centre established in 1989 to support efforts to gather knowledge on the country's biological diversity and promote its sustainable use. It works in close collaboration with diverse government institutions, universities, the private sector and other public and private organizations, both within and outside of Costa Rica. Its areas of action concentrate on inventory and species monitoring; conservation; communications and education; biodiversity informatics; and bio-prospecting.

One of INBio's most innovative educational activities is Cyberhives: Virtual Learning Communities on Biodiversity. Cyberhives was developed with the goal of creating an incentive for innovative uses of science and technology in the classroom, in the field (in natural areas) and in cyberspace and to generate experiences and projects that will stimulate students at primary and secondary school levels to learn about biodiversity.[22] For instance, students can become para-taxonomers by doing field work in their local habitats to identify new species of flora and fauna; if successful, they are encouraged to post their findings on the website.

INBio has also created INBioparque[23] which is a large environmental education and education for sustainable development learning and recreational facility located in the San José urban area. It presents samples of Costa Rica's diverse natural habitats and life zones, a traditional farm and an example of a self-sustaining house that uses alternative energy sources.

The Private Sector and Corporate Social Responsibility (CSR)

Enterprises adhering to corporate social responsibility principles have a recent but important role in ESD-related educational activities in Costa Rica. The Private Enterprise Association for Development (AED)[24], founded in 1998, brings together 90 corporations which promote a culture of social responsibility. All AED projects aim to respond to social needs, become sustainable, replicable, and scaled upwards through institutional action and the empowerment of communities.

AED enterprises approach social responsibility in an integral manner, covering seven areas: internal publics (actors and stakeholders within the company), providers, the environment, public policy, communities, responsible markets and corporate governance. Their quality standards are based on ISO 26000.[25] AED CSR work focuses on two areas:

21 The main website is http://www.inbio.ac.cr/en/. The website of INBioparque is www.inbioparque.com.

22 The Cyberhive portal is www.cibercolmenas.net.

23 http://www.inbioparque.com/

24 http://www.aedcr.com/

25 http://www.iso.org/iso/social_responsibility

(a) Area of corporate development (the internal dimension);

(b) Social investment, i.e. promoting projects through public/private alliances.

For example, projects target children and youth, address HIV prevention in the workplace, and poverty and carbon neutrality education in coordination with the MEP.

Tourism Sector

Today, the conservation of natural resources is part of the mind-set of all Costa Ricans. This is largely the result of actions taken in the 1980s to create the National Park System and other types of protected natural areas, many of which are now under private ownership. Nature tourism is a primary source of foreign currency (22%-24%) for Costa Rica and represents 8% of the country's GDP. In addition, as nature tourism takes place mostly in remote places, where few jobs are available, it distributes tourism benefits among the poorest areas of the country. Both in rural areas and in the city, Costa Ricans appreciate their forests and national parks. The country now has a broader forest cover than in 1980, and the area devoted to national parks has increased two-fold to 14%.

The Certification for Sustainable Tourism Programme, run by the Costa Rican Tourism Board, differentiates tourism businesses based on the degree to which they comply with a sustainable model of natural, cultural and social resource management.[26]

Significant informal education for sustainable development is carried out by sustainable tourism enterprises. Also, there are several associations that offer community-based rural tourism, such as ACTUAR[27] and COPRENA.[28]

26 http://www.turismo-sostenible.co.cr/en/

27 http://www.actuarcostarica.com/app/cms/www/index.php

28 http://www.turismoruralcr.com/en/whatiscommunitybasedruraltourism/whatiscommunitybasedruraltourism.html

Eco-lodge Rara Avis

A pioneering example of a sustainable tourism facility is the eco-lodge Rara Avis. Amos Bien, a biologist and founder of the lodge, explained (personal communication) that in the 1980s some biologists, both foreign and native, began thinking that conservation and development could interact with each other in beneficial ways and came up with their own perspectives on "sustainable development". In that period Costa Rica was facing a serious deforestation crisis. But with 100 years of natural history in their hands, and 7% of the country's area (at the time) protected as national parks, they realised that these two elements could transform the country into a prime tourism destiny. They began a variety of projects that integrated community knowledge and experience with the biologists' knowledge of natural history to create something new. Thus, environmental education that the neighbours of the natural areas could provide and scientific knowledge of the academics were both key inputs. Without getting the communities involved in conservation efforts, it would not have been possible to stop deforestation and destruction. Yet without offering an economic alternative to extensive cattle grazing – which produced in those days USD 10-20 per hectare per year – it would also have been impossible to change those harmful practices. The biologists thus started to create their own private nature reserves and to support the creation of the national system of protected areas. Private reserves such as Monteverde, La Selva, Rara Avis and others began to train local people in how to best combine their traditional hospitable manners and capacity to tell stories with scientific knowledge to provide quality biological interpretation, without which eco-tourism is not possible. Bien says that being in a tropical forest without a guide is like being in a library without knowing how to read. The guides at Rara Avis are all local people without formal training.

The Media

The media play an important role in promoting public awareness of sustainable development issues and challenges. They usually report on the main findings of the annual State of the Nation Report, major international events regarding issues such as climate change, food security, natural disasters and major United Nations forums. They report on social-environmental conflicts and governmental policies related to sustainable development issues, often with a critical perspective.

4. Key Observations

One of the main findings of this case study report is that ESD and EE policy in Costa Rica have not developed in an autonomous manner, independent from policy frameworks related to other domains. Given that there is hardly any educational research in Costa Rica on the effectiveness of the diverse ESD and EE programmes and projects, an inference approach will be adopted to take a look at the impact of educational policy on the state of the nation in key areas where ESD and EE efforts have been carried out.

The State of the Nation Programme on Sustainable Human Development (Programa Estado de la Nación en Desarrollo Humano Sostenible, 2010, p. 174) has been measuring Costa Rica's "ecological footprint". It was found that there is an increasing rate of consumption of natural resources and that in 2008 and 2009 there was an ecological debt: each inhabitant required 12% more of the national territory to satisfy individual consumption than is available in terms of bio-capacity. In 2010, the debt increased to 13.4% (Programa Estado de la Nación en Desarrollo Humano Sostenible, 2011, p. 169). In 2002, the debt was only 3% (p. 173). It seems policies for sustainable development and, in particular, policies for ESD have not been sufficiently effective in moving Costa Rica to become a truly ecologically sustainable nation.

This does not mean, however, that the wealth of human and cultural resources devoted to ESD and EE, in Costa Rica, do not constitute a valuable reservoir of potential if the proper conditions are created.

Main Findings

1. In Latin America and the Caribbean there has been an unresolved debate between proponents of environmental education (policy-makers and practitioners mostly linked to ministries of environment and universities) and proponents of education for sustainable development (mostly linked to ministries of education and universities). The former claim that the longer tradition of EE incorporates social, economic and cultural dimensions of sustainable development and that therefore the ESD paradigm is unnecessary. In the case of Costa Rica, this is clearly not the case. As has been shown in this report, environmental education and the National System of Areas of Protection were developed simultaneously. The acceleration of deforestation in the 1970s and 1980s was able to be reversed so that, at present, one quarter of the country's area is protected. This has provided evidence that mind sets and behaviours can change with the right combination of financial and symbolic incentives.

2. Costa Rica is a country where collective identity has historically played an important and complex role. Collective identity sometimes has the function of spurring collective action towards fundamental transformations, such as the abolishment of the military in 1949 and the creation of a welfare state guided by a social democratic ideology from that period until the 1980s. Costa Rica's role in helping to resolve the serious conflicts in Central America in that decade has also forged its identity as a peaceful nation. When the sustainable development paradigm began to be developed by the Brundtland Commission, it was taken on readily in Costa Rica. The period coincided with a significant transformation in the nation's identity as a preserver of the bio-system.

3. However, the period from the 1980s to the present has also been characterised by a deep-seated belief in the 'good life' achieved through consumerism. Although the collective imagination sees the environment, social-economic equity and democracy as important dimensions of sustainable development, the key question is to what degree the country's positive traditions and aspirations can lead the way to authentic sustainable development or whether this is a form of false consciousness. Surely this situation is no different from what most other countries in the world are facing: sustainable development also means dealing with a conflicting set of values and principles.

4. Currently, Costa Rica has set for itself the goal of becoming carbon neutral by 2021. This goal is widely accepted, although many are sceptical about the possibility of achieving it. The fact that the Ecological Blue Banner Programme has been the only continuing educational policy related to ESD demonstrates that symbolic incentives can play an important role.

5. Another promising avenue and reason for hope would be the formulation and implementation of a policy for synergizing the multiple and valuable educational institutions and experiences in the country, perhaps through CONEA and its members (such as MINAET, MEP, Ministry of Health, CONARE and INBio).

6. Developing a shared personal and collective ethic for sustainable living, based on universal and differentiated responsibilities, as proclaimed by The Earth Charter, is the main educational task at hand.

5. Closing remarks

With the exception of MEP, educational policy related to Education for Sustainable Development is linked to specific policies in a diverse range of policy domains. This applies both to the public sector and the non-governmental sector. Apart from the various attempts to develop a coherent environmental education policy through CONEA, this is very different from what the DESD has been promoting.

The findings of this case study report seem to show that educational and public awareness policies in Costa Rica are developed when certain signs of unsustainability become manifest, particularly concerning the state of the environment, the increasing income inequalities between diverse strata of the population or the increasing rates of violence and criminality.

Officials in various government offices have stressed that the educational policies that work are those that can bring some economic benefit. Once Costa Ricans realised that tourists who came to the country were interested in discovering its pristine eco-systems, nature took on a value worth conserving.

At the same time, as the success of the Ecological Blue Banner Programme shows, giving recognition to those who carry out meaningful actions to promote environmental and social causes can be a powerful incentive if properly managed.

As the findings show, there is a wealth of experience in Costa Rica related to ESD and EE and there exists a genuine willingness to build upon this experience. Clearly leadership is needed to orchestrate the many voices in play. Furthermore, the willingness of the people will be instrumental in Costa Rica's mission to fulfil its potential as a leader in SD and ESD.

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MOROCCO

Ahmed Legrouri and Khalid Sendide

1. Introduction

The purpose of this national review is to analyse the implementation of education for sustainable development (ESD) in Morocco, taking into account the socio-economic and cultural dynamics of the country. It highlights the changes that have taken place in the last decades, as well as the government's commitment to socio-economic development that supports environmental protection and sustainable development.

Over the last two decades, Morocco has taken a number of initiatives and actions to address the complex and interlinked issues of sustainable development. The country has made a major effort in order to reconcile the demands of economic and human

development with the need to protect natural resources and the environment. In addition, there is the need to honour the international commitments of Morocco, in particular those related to the Rio process and the World Summit on Sustainable Development in Johannesburg. Several large investment projects in logistics, transportation, industry and energy have been launched lately, and a positive development has been that the impact on the environment is no longer neglected. The Moroccan state has demonstrated its commitment to environmental protection and sustainable development by placing these concerns at the heart of development projects. In keeping with national and international commitments, Morocco has made great advances in integrating environmental issues into its public policy development and institutional and legal frameworks.

Within the context described above, Morocco launched and implemented a National Strategy for Environmental Protection and Sustainable Development in 1995, a National Action Plan for the Environment in 2002, and a project for creating a National Charter of Environmental and Sustainable Development in 2009.

Being aware of the importance of human resources in development, parallel approaches have been adopted to address the social dimension of development and to focus on enhancing human and social capital. Successful poverty and illiteracy alleviation requires an ambitious human development effort. Morocco has also made a large investment in improving the educational system. An Emergency Programme of Education for 2009-2012 was launched in 2008 in order to accelerate the pace of reforms and the implementation of some projects. The emergency programme, which covers four complementary areas with 23 projects, provides a road map for giving impetus to the implementation of the education and training reform that was adopted by consensus and was based on the National Charter for Education and Training. The novelty is that this programme has received financial and logistic support from the Hassan II Fund for economic and social development, and has also mobilised support from a range of stakeholders, including ministries, public offices, locally elected councils, industry and NGOs.

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Training session for farmers in the Saiss Basin on dip irrigation

Today, sustainable development and environmental protection have become inevitable themes of any political, economic or social debate in Morocco.

2. Background

History and Development of Sustainability and ESD Issues in Morocco

By ratifying the three Rio Conventions on biological diversity, climate change and the fight against desertification, and most of the multilateral agreements that followed, Morocco has embarked on the path of sustainable development and environment protection. The country's determination in this area was reiterated in 2002 at the Johannesburg World Summit which focused on education and environmental awareness as key elements for sustainable development. The United Nations Decade of Education for Sustainable Development (2005-2014) has offered another international framework for further incorporating the notion of sustainability into scientific research and the educational system. Although it is not as yet sufficiently valued, ESD is present today in schools, universities, corporations, associations and society at large.

The development of ESD in Morocco was also supported by other initiatives, projects and programmes launched by the government over the last two decades. The most relevant and important ones are:

- 50 Years of Human Development - Outlook Report of Morocco in 2025: For Improved Human Development
- National Action Plan for the Environment
- National Strategy of Environmental Protection and Sustainable Development
- National Charter for Environment and Sustainable Development
- National Initiative for Human Development
- Celebration of Earth Day
- Strategy for Agriculture Development: Green Morocco Plan
- Water Strategy
- National Solar Plan and Renewable Energies
- National Strategy for Tourism Development (Horizon of 2020)
- National Strategy for Handicraft Development (Vision for 2015)
- White Book of the General Confederation of Moroccan Businesses, CGEM
- National Strategy for Scientific Research Development (Horizon of 2025)
- Industrial Strategy of Morocco "Programme Emergence"

In recognition of all its efforts and commitment to environment protection, Rabat was selected, along with Washington DC, New York, Buenos Aires and Kolkata, to host the 40th anniversary of Earth Day, which is an international event celebrated in 181 countries. Also, from its participation in the Stockholm Conference in 1972, to its involvement in the Summit of Copenhagen in 2009, Morocco has taken several measures to reconcile environmental preservation with sustainable development. The following national programmes, involving different sectors, have been implemented by different government ministries and departments:

- Improvement of the environment for the life of inhabitants
- Protection and valorisation of biodiversity
- Wastewater treatment
- Domestic waste management
- Prevention of industrial pollution and risks
- Protection of air quality
- Reforestation
- Development of watersheds
- Protected areas (biological and ecological sites)
- Fight against desertification
- Cities without slums

Economic and financial instruments were also mobilised for the implementation of these national programmes, namely the National Environment Fund and the Fund for Industrial Clean-up.

The incorporation of sustainable development issues into academic and research programmes has been achieved progressively through the following successive education reforms in Morocco:

- 1979: Introduction of environmental issues into the natural and biological science programmes of secondary education.
- 1985: Introduction of the notions of natural resources preservation and energy economics.
- 1994: New reform based on “pedagogy by objectives” and greater emphasis on the environmental dimension.

- 2000: The National Charter of Education and Training, which recommends including the natural environment of the school in education programmes, as well as the notion of water management and the importance of environmental issues in the socio-economic development of Morocco.
- 2002: The mission of the Directorate of Strategy, Statistics and Planning was modified to incorporate, as a first item, the elaboration of future-oriented studies on the education system and its integration into the economic and social development of the country.
- 2008: The Emergency Programme of Education for 2009-2012, with special financial support committed to the improvement of the education system, the acceleration in the pace of reforms and the implementation of some projects.

Methodology

This case study report is based on desk research and a review of relevant official and unofficial documentation and literature from diverse sources. The Internet was used to collect information and data from websites of government ministries, schools and universities, businesses, professional associations and NGOs. In addition, visits and interviews with key stakeholders who are involved with Education for Sustainable Development, education and development were conducted in Rabat and Casablanca.

3. National Review

In recent years, all parts of Moroccan society have become aware of the importance of natural resources and their preservation as part of socio-economic development. Indeed, the country has shown a long-term political commitment which assures the sustainable preservation of its environment and a better management of its natural resources. The three pillars of sustainable development - environmental protection, economic growth and social equity - are now taken into consideration in all debates and plans for future projects. Legal frameworks that allow decision-makers to act across different domains have been set up; examples include taxes on pollution and pricing of water use. This process has been crowned by the elaboration of the National Charter for Environment and Sustainable Development, which was announced in 2010 during the celebration of Earth Day's 40th anniversary. All components of government were involved and mobilised for the implementation of this Charter, each one following its prerogatives and responsibilities. Many ministries, including the Ministry of Education, were deeply involved in its creation, implementation and evaluation. Education for sustainable development is, at least in part, associated with this Charter and is certainly an inevitable component of its

success. A major part of this report will therefore be linking ESD to the National Charter for Environment and Sustainable Development in Morocco.

Government Initiatives for ESD

During the celebration of Earth Day's 40th anniversary in 2010, the Kingdom of Morocco launched the National Charter for Environment and Sustainable Development. The Charter, which was based on a wide participatory approach at community, regional and national levels, was intended to form the framework for national environmental laws and for future environmental policies.

The Moroccan Ministry of Trade and Industry stated that "the Charter will aim at ensuring that all projects adhere to environmental-friendly specifications, providing proof of Morocco's will to sign up for a progressive policy to reconcile the imperatives of socio-economic development with the preservation of the environment and sustainable development". The same communiqué also sets out the "who pollutes pays" strategy that will be implemented in order to guide the industrial sector towards tangible green adjustments in their business practices.

Groundwater management is also an important pillar in this Charter. The Moroccan government agency responsible for water and the environment mentioned that Morocco produces more than 750 million cubic meters of waste water annually, yet only 100 million cubic metres are treated and about 10 million are re-used. Under the new Charter, the target is to increase waste water recycling to more than 96%. The treated water will be used to irrigate green spaces and farms.

It should be mentioned in this context that according to data from the Moroccan Ministry of Trade and Industry, the cost of environmental damage is calculated to be around 8% of Morocco's annual GDP, which is equal to USD 2.5 billion.

The National Charter has undergone a unique nationwide, public consultative process so that it takes into consideration the interests of all Moroccans. The debate was conducted at the regional level through workshops that addressed all the environment-related problems facing the different regions of Morocco.

The final version of the National Charter was approved in March 2010. According to the Charter, all Moroccans should share the responsibility for the protection and preservation of the environment as well as for sustainable development. Furthermore, "Public authorities are required to strengthen the national legislative and regulatory framework related to the environment and sustainable development and to boost the mechanisms for its implementation, its monitoring and control. The local governments shall take measures and concerted decisions that ensure the protection and preservation of the environment in their respective territories. They are also required to develop and implement integrated programmes that are able to ensure the sustainability of natural and cultural resources. Civil society, mainly non-

governmental organizations, is called upon to socially take into account sustainable development and the protection and preservation of the environment".

According to the Charter, all this will be done by way of awareness programmes; appropriate academic curricula; training in environmental and sustainable development; normative, preventive, curative and punitive procedures; and integration of the environmental component into the planning and implementation of public policies concerning the use of natural resources and areas, which will require the support of public authorities, parliamentarians, locally elected officials and private businesses.

In order to ensure proper implementation of the National Charter, 16 regional observatories will be established which will provide the Moroccan government with yearly reports and recommendations on environmental and developmental issues, as well as on how to deal with potential threats endangering the Kingdom's natural reserves.

Although the National Charter was the centrepiece of Earth Day's 40th anniversary celebration, it was only one part of a major event that celebrated Morocco's commitment to the environment and sustainable development. Earth Day's other activities included: signing of five international conventions for environmental protection; presentation of various environmental projects by Moroccan cabinet ministers which include the fight against desertification caused by forest overexploitation, placing artificial reefs to protect marine ecosystems, using methane gas from a landfill to generate clean energy, eradicating plastic bags and establishing an eco-school programme. Moreover, King Mohammed VI has launched a project to plant one million palm trees by 2015. As will be discussed later in this report, the Ministry of Education has been involved in almost every step of the elaboration of this Charter to ensure that current and future generations will be aware of the importance of sustainable development for achieving these ambitious goals. Morocco is also dedicated to harnessing renewable energy as part of an overall Moroccan energy security plan that was announced in 2008. By reducing waste, increasing efficiency and boosting the use of sustainable energy, it aims at reducing dependence on foreign energy sources which, in 2007, accounted for 96% of Morocco's power. In 2009, the Ministry of Energy and Mining announced a USD 9 billion investment in a solar energy project. The project aspires to create a capacity of 2,000 MW by 2020, which will meet 10% of Morocco's demand for electricity

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and would reduce carbon dioxide emissions by 3.7 million tonnes per year. Since then, education related to sustainable energies has been encouraged in many educational institutions and universities.

Implementation of ESD in School Education

In order to speed up the implementation of education and training reform, the Moroccan Ministry of National Education, Higher Education, Executive Education and Scientific Research launched, in 2008, the Emergency Programme of Education for 2009-2012. This reform was based on four axes, with the first one being the consolidation of general education. The three others dealt with the continuous improvement of the quality of education, modernisation of governance and development of a strategic management of human resources. The target was to carry out a qualitative and quantitative development of school education, including pre-schooling, and the rehabilitation of school infrastructure.

Regarding pre-school education, the main objectives for 2015 were universalization, equity and quality of service. The sector is predominantly covered by the private sector (98%). The total rates of pre-school education in Morocco were around 50%-60%, with rural and female pupils being at a clear disadvantage (girls' pre-school enrolment rates: 51% at national level; 29% in rural areas).

Primary school education (for pupils 6-11 years old) is more widespread (94% at national level; girls' enrolment rates: 91% at national level; 88% in rural areas), but remains below the expectations of the Moroccan state, which seeks a nation-wide generalized primary education. The major problems hindering the development and generalization of primary education include drop-out rates, with 5.7% of students having abandoned school in 2005-2006, and class repetition, a rate of 12.7% the same year. For these two indicators, the Emergency Programme has set targets of 2.5% and 2% respectively.

At the secondary level, the drop-out rate impacts the level of attendance at both lower (students 12-14 years old) and higher (students 15-17 years old) secondary education. Drop-out and repetition rates are still high at both these levels.

With regards to education for sustainable development, the Ministry of National Education, Higher Education, Executive Education and Scientific Research took several formal actions to introduce environment and sustainable development issues into the education system. The first step was to create a new directorate at ministry level, whose mission is to promote school life and extra-curricular activities in schools. The directorate is named Evaluation, Organization of School Life and Joint Formations among Academies. This directorate joined efforts with the Directorate of Curricula to introduce modules related to environment and sustainable development into the curricula, at all levels of school education. Based on the official textbooks used in both primary and secondary education, notions

of environmental pollution, environmental equilibrium, environment preservation and the basics of sustainable development are taught from the first year of primary school to the last year of secondary school; each time from an angle and at a difficulty level that match students' capacity and understanding. Although "sustainable development" is not always explicitly mentioned in these modules, their content clearly introduces the ideas of sustainable development and an environment friendly culture.

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High school students planting trees at Al Akhawayn University during the celebration of the 40th anniversary of Earth Day

Within an integrated governmental approach to encourage and promote ESD in Morocco, the Ministry of Education has accompanied the National Charter for Sustainable Development throughout its different phases. It supported the development of a civic environmental culture (e.g. through organization of student competitions and local and regional forums related to environmental issues), the integration of environmental education into the educational process (e.g. with financial and appropriate pedagogical support, encouraging the creation of clubs on sustainable development) and strengthening human capital to guarantee exemplary management of the environment (e.g. capacity building of school directors, teachers and instructors through appropriate national and international training and conferences).

On the occasion of the Earth Day celebration in 2010, the Ministry of Education created a sub-division in charge of "Life, Health and Human Security" in schools in order to better support the implementation of ESD at different education levels.

Examples of ESD Projects Carried out in Schools

Eco-Schools: This programme is an international project initiated by the Foundation of Economic Education (FEE) in 49 member countries and was launched in Morocco in 2006. The pilot phase involved 8,475 students and 17 schools covering nine of the country's regions. The Eco-Schools programme aims at educating students about positive ecological principles so as to prepare them for some of the environmental issues that their schools might face with regards to water, energy and waste management. The programme is based on respect of the environment and the adoption of related good citizens' behaviour and practices. In order to ensure the successful implementation of the Eco-Schools initiative in the Kingdom, the Ministry of Education, in collaboration with the Mohammed VI Foundation for the Protection of Environment (M6FE), prepared a comprehensive booklet for Moroccan schools to encourage them to adhere to this ambitious programme. The booklet presents

an interesting and simplified description of actual problems, impacts and expected behaviours related to the efficient management of water, air, solid wastes, forests, endangered lakes and ecological sites in Morocco. It should be noted that the active involvement of students in most of the steps of the Eco-Schools programme has so far been an important component of efficient ESD.

One Student, One Tree, One School, One Forest: The Kingdom of Morocco, whose forests have lately been overexploited and alarmingly reduced, has become aware that adequate education and awareness about the ecological importance of forests has to accompany all the drastic measures that the government will be taking to improve forest preservation. Within the framework of a national action to reconcile Moroccan citizens with their environment and to encourage them to see this national heritage as being their own, schools and students constituted the primary target. It has been decided that, as a first step, 6 million students will be directly in charge of planting seeds/cuttings in their school grounds and surroundings. Pedagogical activities (literature search, workshops) to educate students about the value of forests, planting and green space are scheduled before and after each planting activity.

This programme is believed to have a very positive impact on students' involvement, as the primary target, as well as on their families and surroundings, as secondary targets.

Water Management in Schools: Despite the important measures that multiple government agencies and administrative units have taken to optimise water consumption in cities and rural areas, results have been below expectations. It has been shown that progress is limited by poor water management by most users, and that even minor good citizens' practices would have had a great impact on water savings. The Ministry of Education is supporting this effort by incorporating water use education into elementary school programmes.

Environmental Rehabilitation of Rural Schools: The Ministry of Education has also launched extra-curricular initiatives related to ESD; for example, the elaboration of guide booklets for specific topics, such as an "awareness guide for fighting plastic bags". In addition, region-specific guides have been issued by regional academies in collaboration with the Ministry in order to promote efficient, rational and sustainable interaction of citizens of all ages with their environment in general and with humid regions (such as the Meknes-Tafilalet region specified in the booklet) in particular. Many booklets related to different sustainable development sub-themes have so far been issued either by the Ministry or by regional or national agencies and organizations in collaboration with the Ministry.

However, despite these efforts to promote ESD, many limitations and deficiencies have been recorded: misuse of water and electricity in teaching institutions; insufficient knowledge of natural resources management and poor comprehension

of relative responsibilities between government and citizens; limited involvement in energy saving processes and the use of renewable energies; absence of a formal structure for managing environmental issues at provincial and regional levels concerning schools and the education sector.

ESD in Higher Education

Academic Programmes

Over the past few years, all higher education institutions in Morocco have organized SD-related regional, national and international conferences and workshops.

Tangible efforts have been made to implement ESD in higher education, both with regard to academic programmes and research projects. Today there are 15 public universities in Morocco and a new state-owned university that is endowed with financial and administrative autonomy (Al Akhawayn University in Ifrane). Education for sustainable development is being incorporated into these universities and, over the past few years, all higher education institutions have organized SD-related regional, national and international conferences and workshops.

While a review of academic programmes indicates that "sustainable development" is rarely mentioned in the title, a large proportion of Bachelor and Master programmes cover aspects of sustainable development, environmental protection and natural resource valorisation. Moroccan universities have been very responsive to the different industrial, economic and social programmes that were launched in the country over the last two decades. Their involvement was reinforced especially after 2000, when they were given autonomy to develop new academic programmes.

Research

A National Strategy for the Development of Scientific Research for the period 2009-2012 and the horizon of 2025 was developed in 2006. In consultation with stakeholders and partners, research priorities were defined in light of the general development strategies of the government. In 2007, a programme on environment and sustainable development was added to the list of priority programmes. In 2011, this list contained eight national research priorities.

They are implemented during the 2009-2012 period, which coincides with the implementation of the emergency programme which considers research to be a priority activity. Universities and research institutions have been very active in implementing the priority programmes as they serve, like academic programmes,

the needs generated by the different industrial, economic and social programmes launched in Morocco. Researchers in the area of environment and sustainable development have been actively participating in the calls for research proposals managed by the Ministry of Education. Out of 1277 funded research projects, 185 have been dealing with ESD.

Research structures (laboratories and research groups) have undergone an accreditation process by the Ministry of Education. By the end of April 2008, 115 research structures from 33 institutions and 13 universities were working in the area of environment and sustainable development. Most of the research is done in science, technology and engineering faculties and schools, as is shown in the table below.

Table 1: ESD research and type of academic institution (in 2008)

Faculty/ School	Science	Science and tech-nology	Engineer-ing	Multi-disciplinary	Letters	Law
Percentage	66.9	20.1	5.76	3.60	2.88	0.72

Examples of ESD Initiatives in Higher Education

The following two examples illustrate the kinds of initiatives related to ESD that have been introduced into higher education in Morocco.

The **Al Akhawayn University in Ifrane** (AUI, www.aui.ma), inaugurated in 1995, is an independent, public, not-for-profit, coeducational Moroccan university committed to educating future leaders of Morocco and the world through a globally oriented, English-language, liberal arts curriculum based on the American model. One of the main specifics of the institution is that it has adopted a liberal arts education system, which means that all students, regardless of their background or major, share a university core curriculum, consisting of a variety of transversal courses in different disciplines. Many of these courses address, directly or indirectly, sustainable development issues from different angles, ranging from environmental chemistry and environmental biology to social and ethical issues. Since spring 2011, students can enrol into a new Masters programme in Sustainable Energy Management. Furthermore, students at AUI are very active in clubs intending to develop their personal extracurricular potential, including in clubs that promote sustainable development activities. These can stress the social aspects of sustainable development (e.g. organizing awareness campaigns to fight plastic bag use or encourage efficient energy use), or they can be more concerned with the technical and technological aspects of SD (environment clubs). The University has

also a Centre for Environment and Regional Development, whose activities promote environment-friendly practices through workshops and regional green actions.

The research activities carried out at AUI, in the area of environment, are in line with the University strategy, which promotes research that is likely to have direct social, economic or technological impacts on society. They focus on solutions that can accompany regional and national development while preserving the environment and valuable natural resources. The University also contributes to the dissemination of an environmental culture through conferences, workshops, awareness raising activities and education programmes, open to all categories of society. The focus here is on water issues, natural resources valorisation and renewable energies. Several projects have earned recognition and received funding from international organizations and have been discussed at international conferences and published in international journals. These projects include:

- Using Demand-Side Management to Adapt to Water Scarcity and Climate Change in the Saiss Basin, Morocco;
- Participative and Adaptive Experimentation of Management Models of Forest Resources in the Atlas Mountain Chains of Algeria, Morocco, and Tunisia;
- Solar Energy: The NACIR Project (New Applications for Concentrator PhotoVoltaic: a Fast Way to Improve Reliability and Technology Progress);
- The Sahara Trade Winds to Hydrogen: Applied Research for Sustainable Energy Systems Project;
- Bioconversion: Biofuel (Bioethanol) from Lignocellulosic Substrate;
- Development of a Pilot Unit for Conversion of Waste Cooking Oil into Biodiesel;
- UNESCO Chair "Water, Women and Decision Power";
- Development of a Communal Plan for Ifrane;
- Other projects dealing with energy efficient buildings and energy auditing.

Moreover, the University has been reaching out to its surrounding communities through workshops, conferences and educational sessions for primary and secondary school students. Examples include the yearly celebration of Environment Day, which involves secondary school students.

The **Sidi Mohammed Ben Abdellah University** (USMBA, www.usmba.ac.ma), established in 1975 in the city of Fes, offers courses in the humanities, social sciences, economics, medicine and in science and technology. While there are no specific SD courses, different SD components are transversally taught in diverse courses (e.g. chemistry, biology, earth science…). The Faculty of Science and Technology also

encourages its students to create and join clubs, many of which address environment and development issues. One of these, the Water and Environment Initiative, is dedicated to environment and sustainable development awareness raising and other activities.

In terms of research, USMBA has many research laboratories and research teams. Some of the teams address sustainable development issues, especially in relation to water, environment and solid and industrial waste management. Recently, the University has launched a Centre of Excellence for Water, Environment and Sustainable Development. Within this multidisciplinary unit, work occurs in different laboratories and research teams, as well as in small companies.

The Faculty of Science and Technology has submitted, for accreditation, a Master's programme entitled "Ecology, Conservation of the Environment for Sustainable Development" (ECE2D). This multidisciplinary programme is the first of its kind in Morocco. It aims to train graduates capable of integrating and analysing problematic situations related to environment and sustainable development.

In 2010, in collaboration with UNESCO, the Faculty of Science and Technology organized the Sixth International FRIEND (Flow Regimes from International Experimental and Network Data) Conference, dedicated to global change and risks in water resources.

ESD in Non-Formal and Informal Education

Over the past decade, ESD has been effectively introduced into large sections of the population, especially in urban areas, through non-formal and informal education. The associations and organizations that are promoting ESD follow different, yet complementary approaches, ranging from educational media campaigns to larger field actions and initiatives. The media (radio, TV, newspapers) are also doing more to support these initiatives and raise awareness of sustainable development. What follows are a few examples of associations and projects, among hundreds, that deal with different subjects, approaches and strategies aiming to promote ESD in Morocco:

The Mohammed VI Foundation for the Protection of Environment (FM6E)

Aware of the importance of the ecological heritage of the Kingdom, and the different challenges it faces, the Mohammed VI Foundation for the Protection of Environment, under the Presidency of Her Royal Highness Princess Lalla Hasnaa, has launched several initiatives based on a sustainable development approach. The Foundation – whose motto is 'All for the Environment' – stresses awareness raising and shared responsibility among all potential stakeholders and support for youth education. Since its creation in 2001, the foundation has supported numerous projects in the areas of coastal protection, air quality and climate, environmental

education, restoration of historical parks and gardens, including an education and public awareness programme to foster the love of nature, and sustainable tourism.

Environmental education has been at the heart of the Foundation's mission, recognising that sustainable development requires new behaviour that should be automatic and initiated at an early age. Prominent project examples are: Environmental education on the importance of beaches: Preservation of the Nador Lagoon; the Eco-Schools programme; the contest for Young Reporters for the Environment; the publication of training kits and partnerships with the Foundation of Economic Education (FEE) and the Islamic Educational, Scientific and Cultural Organization (ISESCO).

Education for Sustainable Development through Extra-Curricular Activities

An interesting project was conducted in rural primary schools in the Marrakech region to introduce students (5-6 years olds) to energy efficiency and an environmental culture. Led by Prof. Fouad Chafiqi, and in collaboration with the NGO Foundation Marrakech 21 (FM21), a group at Marrakech University, working on the didactics of sciences (Groupe de Didactique des Sciences de Marrakech), the National Centre for Renewable Energy Development (CDER) and the German Agency for International Cooperation (GIZ), the project undertook eight weeks of field study and used a participatory approach that extensively involved pupils and instructors in most of the activities. Downstream analysis of the learning outcomes showed a very positive impact on both students and instructors who started taking spontaneous individual and/or group actions, such as sorting used batteries and making an effort to optimise the use of energy sources. This project is also a good example of collaboration between primary and higher education levels to promote ESD practices and initiatives.

Associations

Afak (www.afak.ma) is an association that develops valuable awareness media programmes to promote attitudes in favour of citizenship, ethical and moral values among Moroccans, such as tolerance, gender issues, solidarity and honesty. AFAK is a good example of a successful association that strives for effective implementation of sustainable development policies and practices in Morocco.

The **"Association des Enseignants des Sciences de la Vie et de la Terre"** (AESVT): Many of the activities of this association of life and earth sciences teachers contribute to promoting ESD in Morocco. An example of such an action is the development of "Environment Educational Centres", which AESVT is carrying out in partnership with the Ministry of National Education. The centres' work often depends on their location with regard to their environment, regional and socio-economical characteristics and needs. In the region of Mohammedia, for example, the focus is on humid zones, while the centre in Casablanca has opted for a theme

related to water, biodiversity and environmental issues in Morocco, and the centre in Benslimane deals with forests and their preservation. In the past two years, the association's membership has grown, as well as the size of the target population.

The **"Association d'Education Environnementale et de Protection des Oiseaux au Maroc"** AEEPO (www.tanmia.ma) carries out activities that promote ESD, more precisely environmental education related to eco-tourism and protection of the Moroccan fauna (endangered bird species in particular) and flora. In partnership with national and international organizations, AEEPO has been conducting many workshops, as well as producing and distributing awareness flyers related to bird protection for target populations.

ESD in Teaching and Learning Processes

As has been mentioned earlier in this report, many sustainable development aspects are covered at different education levels in a variety of teaching programmes. However, in order to avoid confusing younger learners, sustainable development is deliberately not mentioned explicitly at the primary and secondary school levels. For example, there are teaching modules and textbooks addressing such issues as the preservation of the environment, water preservation, pollution, recycling, global warming and the responsibility of civil society to the environment and development. These modules and textbooks have been officially adopted by the Ministry of Education and are used in schools as support material in diverse disciplines. This approach is not necessarily the optimal one and many other countries have succeeded in implementing ESD as a whole and distinct component of educational programmes.

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High school students expressing their views during a workshop organized at the university during the celebration of the 40th Anniversary of Earth Day

Academic programmes completely devoted to sustainable development have started to make their way through Moroccan universities. Several programmes related to SD and/or incorporating SD modules are offered today in different faculties in the fields of science and technology, humanities and social sciences, business and economics and at different levels (bachelor, master, and doctorate).

Educational and Pedagogical Materials (Use of Technology)

As has been said, ESD is not mentioned as such in primary and secondary education in Morocco. However, several modules describing approaches and issues related to SD, with a particular focus on the environment, are used in different courses. A review of the SD-related modules provided in the textbooks published by the Directorate of Curricula of the Ministry of Education makes it possible to show SD-related modules used in different disciplines at different levels.

Table 2: SD-related models in different disciplines and at different education levels

Level	Environmental Pollution	Ecological Balance	Environment Protection
Primary	Arabic, Islamic Education, Science Activities, Vocabulary	Arabic, French, Art Education, Islamic Education, Science Activities, Vocabulary	Arabic, French, Art Education, Islamic Education, Science Activities, Social Sciences
Middle Secondary	Arabic, French, Physical Sciences	Arabic, French, English, Islamic Education, Life and Earth Sciences, Social Sciences	Arabic, French, English, Islamic Education, Physical Sciences, Philosophy
Higher Secondary	English, Spanish, Life and Earth Sciences	English, Islamic Education, History and Geography, Life and Earth Sciences, Philosophy	Spanish, Islamic Education, History and Geography

Recently, the Ministry of Education launched the ambitious programme GENIE (www.geniemaroc.com). The main objective of this programme, which aims at generalising the use of ICT in learning and teaching, is improving teaching quality in Morocco through the appropriate use of ICT pedagogical tools. Although this programme has many limitations, considerable progress has been observed during the past two years, in particular with regard to ICT use by teachers. The programme can potentially add a real boost to ESD in schools. Another related project has been successfully implemented by the Centre of IT Innovation and Human Development (CITI) at Al Akhawayn University in Ifrane (CITI.aui.ma) during the past four years. This project, funded in part by the Korean International Cooperation Agency (KOICA), aimed at digitising the content of all scientific courses (mathematics, physics, chemistry, and life and earth sciences) in secondary teaching programmes. It includes many simulations, animations and documentary movies in an attempt to introduce SD and environment issues into secondary schools. Both the GENIE and CITI initiatives seem to be positively impacting ESD in many schools in Morocco.

Monitoring and Evaluation

Despite all the concrete actions undertaken by different stakeholders in Morocco to implement ESD programmes, there is a lack of monitoring and evaluation tools to measure progress. Sustainable development culture is certainly growing in Morocco, but tangible key performance indicators have not yet been defined. The National Observatory for the National Initiative of Human Development and the National Strategy of Environmental Protection and Sustainable Development are two potential frameworks for generating data about the impact of education on SD.

4. Key Observations

Until reliable key performance indicators are developed, it is useful to do a SWOT analysis of ESD in Morocco based on the strengths, weaknesses, opportunities and threats (SWOT) that this effort entails.

Strengths

- Full government support for an effective sustainable development culture.
- The National Charter for Environment and Sustainable Development has brought different ministries and stakeholders together in support of a convergent sustainable development strategy.
- The Ministry of Education is taking concrete action to ensure effective implementation of ESD in the country, from primary to higher education.
- Many NGOs and associations have become aware of the crucial role that non-governmental stakeholders can play in the implementation of a SD culture in the population and many of them are having a substantial impact on ESD in Morocco.
- The media are actively involved in raising awareness among different sections of society of the importance of universal participation in the sustainable development of the country.

Weaknesses

- Confusion in some categories of the population, especially in rural areas, about the responsibility of each individual in sustainable development. Many people still think that the development of the country is solely the responsibility of the government and that their contribution will always remain insignificant or be neglected.

- The population is more likely to be proactive in the implementation of SD if extra efforts were made to better explain the broad concept of SD and its importance for the country.

- Small number of academic programmes devoted to SD.

Opportunities

- More efficient collaboration between different government ministries, non-governmental organizations and associations could result in a greater optimisation of efforts and could ensure faster and more effective implementation of a SD culture.

- ESD in Morocco could be supported by other initiatives, projects and programmes launched by the government in the last two decades.

Threats

- ESD has to be implemented in Morocco in a more homogenous manner; it seems today that those in rural areas are less concerned with ESD than those in urban areas. Even if there is a strategy to homogenize ESD across the country, a delay in implementing it in rural areas could jeopardize the important progress in ESD that Morocco has achieved so far.

- Some downstream actions for effective implementation of SD which follow the present nationwide awareness campaigns might suffer from insufficient financial resources.

In order to strengthen ESD in Morocco, governmental sectors need to increase their initiatives and collaboration. For example, they should:

- Provide more formal ESD in teaching programmes and curricula;

- Increase collaboration between the ministries of education, industry and agriculture;

- Involve the media more formally in awareness raising about ESD;

- Seek more funds and international collaboration for the nationwide implementation of an effective SD culture;

- Focus more on Education for Sustainable Development in rural areas;

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School children painting nature during a field trip in the forest near Ifrane (summer camp)

- Clarify the difference between ESD and environmental development; and
- Encourage national networking and information sharing between different stakeholders related to sustainable development.

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A university researcher interviewing female farmers from the Saiss Basin

5. Closing Remarks

The development of ESD in Morocco is presently being supported by a large number of initiatives, projects and programmes launched by the government in the last two decades. These are meant to overcome shortcomings of sustainable development in different sectors of activity. The Ministry of Education has taken many initiatives to incorporate SD into academic programmes and scientific research. The private sector is also contributing to the development of ESD in Morocco. Most of the businesses and industries working at the international level are required to comply with both national and international standards regarding clean production and environment protection. Morocco is committed to sustainable development at the international level and has ratified most of the agreements and protocols related to environment protection for sustainable development. Moreover, several ESD initiatives in Morocco are carried out with support from partner countries and international organizations.

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SOUTH AFRICA

Presha Ramsarup

1. Introduction

Education for Sustainable Development (ESD) has over the last 15 years grown in richness and scope across South Africa. The journey has been a vibrant one that has evolved in diverse contexts and engaged people from all walks of life in processes of social change. ESD processes have grown and evolved from a strong environmental education practice-based community that has extensive knowledge and experience of supporting active learning, working with environment within curriculum and working with educational and environmental change. This review highlights some aspects of this story, some of the key learnings and emerging questions.

Emerging policies in democratic South Africa have integrated key ESD issues and agendas such as human rights, peace building and reconciliation, social justice, gender equality, HIV and AIDS, cultural and religious diversity, rural development and poverty eradication and these have been integrated into the country's transformation agenda. This has laid a strong foundation for 'whole system' change. But despite being integrated into various policies and strategies across various sectors, the absence of strong systemic support for ESD within the Departments of Basic Education and Higher Education and Training (i.e. absence of a national strategy and national co-ordinating committee) has had a severe influence on the co-coordinated implementation of ESD.

Environmental concerns have been elevated on the government agenda and the new Green Growth Path is very conscious of opportunities in the green economy and the need to support sustainability innovation. This has raised numerous questions concerning the scope of education, training and skills development and the quality of ESD-linked learning in schools, universities and technical and vocational education. Thus, emphasis has been placed on critically reviewing and strengthening the skills supply systems in South Africa to improve the resource base of the country.

2. Background

As South Africa emerges from decades of social and racial oppression, the reality that apartheid left behind a grim ecological legacy that will influence political, social and economic conditions for decades is only now being fully comprehended. The development of sustainability discourses in South Africa is thus rooted in its turbulent history. This background makes an attempt to locate current ESD practices in broader transformation discourses in South Africa.

Historically the approach to ecological concerns pre-1980 was fragmented and conservative, reflecting the interests of the privileged white section of South African society. Government and non-government organizations were largely concerned with establishing and maintaining nature parks and saving endangered species, such as the rhinoceros. Little attention was paid to the negative impact of conservation programmes on the impoverished black population living in the affected areas. Thus before 1980 the dominant discourse was predominantly conservation orientated, with a strong intent to preserve and conserve species but there was little recognition of people and their needs. It also highlights the complete absence of social justice in the environmental discourse of the time.

The early 1990s were marked by radical political change in South Africa, with the unbanning of the African National Congress (ANC) changing the South African political landscape. This created political space for organizations to broaden their horizons beyond anti-apartheid politics, to a more participatory approach to ecological

concerns. People and environment came to be seen as inherently connected.

© UNESCO/WESSA – Eco-schools

After the first democratic election in 1994, a comprehensive consultative process, known as the Consultative National Environmental Policy (CONNEP) process, was initiated. It culminated in the promulgation of the National Environmental Management Act (NEMA) in 1999. Central to its character is the concept of cooperative environmental governance. NEMA places people and their needs (physical, psychological, developmental, cultural and social) at the forefront of environmental management. Environmental thinking shifted to linking ecology to the socio-economic welfare of the nation as a whole.

Within the education arena, the National Education Coordinating Committee (NECC), a national body representing teachers, parents and students, initiated processes interrogating policy options for education. The NECC operated within a value framework derived from the ideals of the democratic movement. This value framework encompassed principles of non-racism, non-sexism, a unitary system, democracy and redress. These values formed the core of the curriculum recommendations made for the curriculum development process.

In the early 1990s, a collaborative group of environmental education, government and civil society stakeholders formed the Environmental Education Policy Initiative (EEPI), in response to the need for a more proactive lobbying role for the environmental education sector during the emerging processes of change and curriculum development. Their efforts were rewarded with an important breakthrough which led to a principle, in the 1995 White Paper on Education and Training, that gave significant impetus to further develop the Environmental Education curriculum. This principle read:

… environmental education, involving an interdisciplinary integrated and active approach to learning, must be a vital element of all levels and programmes of the education and training system, in order to create environmentally literate and active citizens and ensure that all South Africans, present and future, enjoy a decent quality of life through the sustainable use of resources (Department of Education, 1995, p. 18).

Environmental educators had thus established themselves as official stakeholders in the curriculum development process and had institutionalised a role for environment within this process. The role of environmental justice organizations, as part of the

curriculum lobby group, was significant, as their messages and key ideas have had a shaping influence on the curriculum movement and have helped to make the links between poverty and ecology a national priority. Some of the key elements of the curriculum discourse at the time were greater support for social justice, a broader view of environment and the emergence of contextual approaches, focusing on learners making decisions, engaging in dialogue and taking action in local contexts.

This short historical detour highlights that the emergence of the Education for Sustainable Development (ESD) discourse is situated very well in the emerging educational discourse and priorities of South Africa. As will be illustrated below, most emerging national polices and strategies have coupled issues of poverty, justice, human rights, cultural diversity, gender and ecological sustainability.

Methodology

Data for this case study was sourced from active ESD stakeholders who were requested to submit examples of initiatives and activities. Various inputs were received from diverse learning contexts. The data were complimented by extensive desktop research and document analysis of relevant government and organizational documents. In addition, key ESD stakeholders were consulted. The draft review was circulated for input and comment.

3. National Review

When the new South African Constitution was adopted in February 1997 it linked environmental issues to human rights and social responsibilities. Recognising that all citizens have the right to an environment that is not detrimental to their health or well-being, the Constitution thus signalled a national commitment to environmental action, as quoted in the *Bill of Rights* of the new Constitution, Chapter Two, Section 24 (South African Government, 1996):

Everyone has the right to:

(a) an environment that is not harmful to their health or well-being; and

(b) have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that

- **(i)** prevent pollution and ecological degradation;
- **(ii)** promote conservation; and
- **(iii)** secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

These developments signal an emerging political will to focus on environmental issues in the fledgling democracy and the changing policies of the country. Most legislation drawing from the 1997 Constitution has enshrined ideas of human rights, social and environmental justice and ecological sustainability.

In the following section, a selection of national policies are explored that shape and guide ESD practices in the education and training sector.

The National Framework for Sustainable Development (NFSD)

In July 2008, the South African Cabinet adopted the National Framework for Sustainable Development (Department of Environmental Affairs and Tourism, 2008). The purpose of this Framework was to enunciate South Africa's national vision for sustainable development and indicate strategic interventions to reorient South Africa's development path in a more sustainable direction.

The strategic interventions required to achieve the nation's vision for sustainable development are grouped into five critical "pathways". These "pathways" constitute the strategic focus areas for action and interventions that are necessary to reach the "national ideal" as described in the national vision for sustainable development. They reflect a systemic and integrative approach and seek to transcend traditional divisions and sectors.

Our pathways to sustainable development

- Enhancing systems for integrated planning and implementation
- Sustaining our ecosystems and using natural resources sustainably
- Investing in sustainable economic development and infrastructure
- Creating sustainable human settlements
- Responding appropriately to emerging human development, economic and environmental challenges

Source: Pathways to sustainable development (Department of Environmental Affairs and Tourism, 2008, p. 10)

In a developing economy, achieving the "national ideal" required new economic thinking, which is starting to emerge in South Africa as depicted in the new growth path.

Emergence of a Green Growth Path in South Africa

In 2010, the Green Economy Summit was convened by the President and four government departments: Department of Environment Affairs (DEA), Department of Economic Development, Department of Science and Technology (DST) and the Department of Trade and Industry (DTI). This summit endorsed a 'green' growth path that is resource efficient, less carbon intensive and pro-employment' (Department of Environmental Affairs, 2010c). At this seminal occasion, the summit concluded that knowledge is the key driver in future economic development and highlighted the critical need to define the educational and skills development needs and programmes required to achieve the job creation potential of a green growth path.

Following the Green Economy Summit, the President laid out a dynamic vision for how South Africa can 'collectively achieve a more developed, democratic, cohesive and equitable economy and society' (South African Government, 2010). Among other strategies, the plan outlines how South Africa can take advantage of new opportunities in the knowledge and green economies, leverage social capital in the social economy and the public services, and foster rural development and regional integration.

Preparing South African society for participating actively in a green growth path will require a systemic and integrated approach involving a broad based review of the South African education and training system.

Human Resource Development Strategy for South Africa (HRDSA)

Strengthening the nation's education, skills and human resource base is one of the South African government's highest priorities; hence why "Stepping up education and skills development" is programme four in the New Growth Path's (NGP) development policy package for growth, decent work and equity (South African Government, 2010).

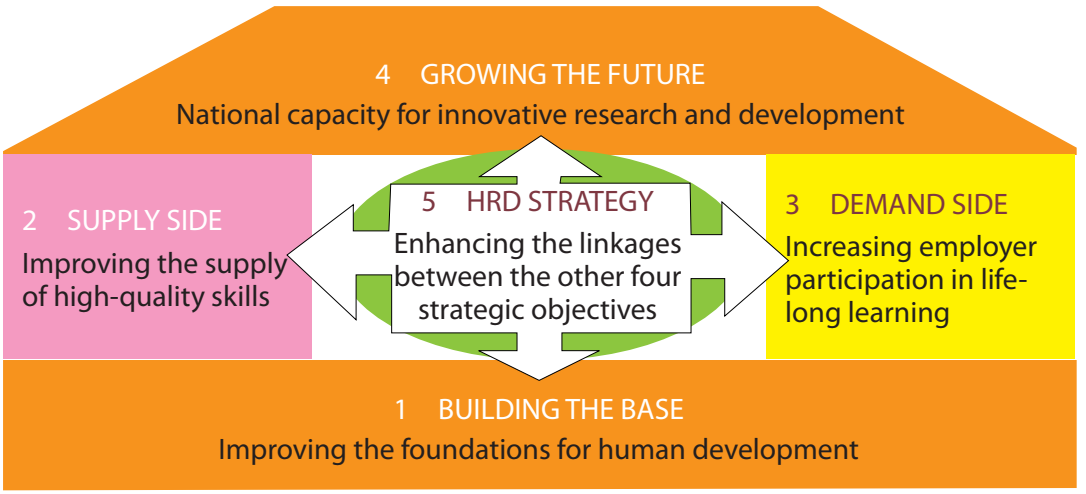

Figure 2: Four Pillars of the Human Resource Development Strategy for South Africa (diagram re-drawn, original source unknown)

Supporting this vision of education and lifelong learning, the HRDSA strategy, together with its subcomponent, the National Skills Development Strategy (NSDS 111), outlines skills development priorities for all educational sectors, namely higher education, vocational and workplace learning. High priority is placed on addressing poverty through access to quality education; access to post-school learning opportunities, employment and the development of a responsible citizenry (Department of Higher Education and Training, 2010b; 2011).

HRDSA and NSDS 111 create institutional mechanisms at different levels of government for increasing awareness and responsiveness to the central role of education and training in achieving the social and economic goals of South Africa.

The policy discussion above has tried to illustrate how South African policy and development frameworks are well positioned by history, experience and mandate to ensure that the key priority areas of ESD are integral to the country's planning.

Review of National ESD Activities

In developing a democratic education system where everyone has the opportunity to benefit from social change, South Africa has prioritised issues of access to quality learning. This section explores the scope of ESD activities within the formal and informal education sectors of South Africa. It highlights some of the key ESD initiatives, policy imperatives and progress towards creating a more sustainable society. The first part highlights the programmes enabling access to learning, and the second part illustrates how ESD issues have been appropriated and integrated into educational practices.

ESD in School Education: Enabling Access to Quality Education

All South Africans have the right to a basic education. Under the South African Schools Act, education is compulsory for all South Africans from the age of seven (Grade 1) to age 15, or the completion of Grade 9. General Education and Training also includes Adult Basic Education and Training, which creates opportunities for adults who have not received formal schooling to access school achievement certificates.

Education currently receives about 5.3% of gross domestic product (GDP) and 20% of total state expenditure, giving South Africa one of the highest rates of public investment in education in the world. While significant progress has been made with this investment in education, real challenges remain that need to be addressed. Table 3 illustrates school attendance of learners 7-13 years old.

Table 3: School attendance figures for 7-13 year olds

Gender	2002	2003	2004	2005	2006	2007	2008	2009
Male (%)	96.4	96.9	97.9	98.1	97.9	98.6	98.2	98.4
Female(%)	97.1	97.9	98.5	98.4	98.4	98.0	98.0	98.8
Total(%)	96.7	97.4	98.2	98.2	98.2	98.3	98.1	98.6

Current data show that less than 2% of learners are not attending primary school, which reflects an increase in attendance of almost 3% in the last 5 years. The data also illustrate that there is little difference in attendance statistics for boys and girls in primary schooling in South Africa.

The South African government, together with other development partners in both the private sector and civil society, is undertaking a range of initiatives aimed at improving and strengthening the quality of education and enabling better access to quality education. Initiatives include the adoption of a National Integrated Plan for Early Childhood Development (ECD) to forge greater synergy between government programmes.

ESD in School Education: Supporting Curriculum Change

Considerable progress has been made in influencing curriculum change processes and emphasising the integral role of ESD in teaching, learning and education support structures.

In a parallel process to the curriculum rollout, the Ministry of Education established the National Environmental Education Project for General Education and Training

(NEEP-GET) to strengthen environmental learning in the South African curriculum. The project, which was situated in national and provincial departments of education, represented the largest environmental education (EE) initiative driving whole system change in South Africa. The project worked with curriculum support staff (at national, provincial and district levels), with teachers and with EE partners involved in supporting environmental learning in schools.

The concerted input from the broader EE community had a huge impact on the presence of environmental learning in the national curriculum, as evidenced below.

The National Curriculum Statement (NCS, Grade R-9) aims to "… establish a society based on democratic values, social justice and fundamental human rights." (Department of Education, 2002, p. 8.) This is encapsulated further in the vision of the curriculum, which shows a "… life-long learner with a respect for the environment and the ability to participate in society as a critical and active citizen." (Department of Education, 2002, p. 8) To attain this vision, one of the foundational principles of the NCS (R-9) states:

"The curriculum can play a vital role in creating awareness of the relationship between human rights, a healthy environment, social justice and inclusivity. … all Learning Area Statements reflect the principles and practices of social justice, respect for the environment and human rights as defined in the Constitution" (Department of Education, 2002, p. 10)

Through the articulation of this principle, environment became an integral part of all eight Learning Areas.

As environment and sustainable development were new areas of knowledge for teachers, concerted efforts were needed to support curriculum staff and teachers to 'make sense of' and to 'apply' this focus in their day to day curriculum work. Educators needed support to understand environmental issues and risks from local, national and global perspectives to develop a complex holistic understanding of environment from within the human rights/social justice framework. The NEEP-GET highlighted that an in-depth focus on teaching and learning processes, learner-centred classroom practices and opportunities to explore methods were essential for any change in teaching practice to occur.

A stronger conceptual framework to support the implementation of the National Curriculum Statement (NCS) was needed. Curriculum Assessment Policy Statements (CAPS) were developed.

CAPS is a content and assessment framework which guides and supports teachers. It integrates contemporary environmental and sustainability content into almost every subject and level of the schooling system, from Grade R to Grade 12. Substantial options for assessment of ESD learning have also been integrated into the CAPS framework. Key underpinning CAPS principles are:

Human rights, inclusivity, environmental and social justice: infusing the principles and practices of social and environmental justice and human rights as defined in the Constitution of the Republic of South Africa. The National Curriculum Statement Grades R-12 is sensitive to issues of diversity such as poverty, inequality, race, gender, language, age, disability and other factors.

Other underlying CAPS principles that support an ESD orientation for learning include social transformation, active and critical learning, high-level of knowledge and skills, valuing indigenous knowledge systems, credibility, quality and efficiency.

National Teacher Development Network (NTDN)

In an attempt to consolidate the national effort, all of South Africa's major ESD organizations have conceptualised a sector-wide response to develop a national high-quality, high-impact Teacher Professional Development Programme that will support teachers in acquiring the environmental knowledge, skills, values and competences needed to teach the environmental component of the South African national curriculum.

The NTDN includes partnerships with the Department of Basic Education (DBE), the South African Council of Educators (SACE) and the Education, Training and Development Practices Sector Education and Training Authority (ETDP SETA). The ESD teacher development programme will be accredited by the ETDP SETA, and teachers will earn professional development points from SACE for their participation. This will institutionalise the programme within South African policy systems and frameworks. It will focus on designing, implementing and evaluating environmental learning programmes and has three core modules:

- Knowing your subject and context
- Improving your teaching practice
- Improving your assessment practice

It is envisaged that this initiative will impact on all teacher education institutions nationally and will provide access to environment and sustainability teacher education for all in-service and pre-service teachers in the South African education system, eventually reaching the majority of South Africa's teachers through a longer-term programme. This initiative would also enable up-scaling the considerable innovation that has happened over the years with EE teacher development and would provide a sustained driver of funding for ESD work.

South Africa has a long history of high-quality school-based EE with a strong culture of practice-based innovation. There are several school-based programmes that highlight the effective integration of ESD into all areas of schooling, at primary and secondary level.

ESD Activities in Primary and Secondary Schools

The **Eco-Schools Programme** is designed to encourage curriculum-based action for a healthy environment. It is an internationally recognised award scheme that accredits schools that make a commitment to continuously improving their school's environment. The programme is one of the most extensive school-based ESD networks in South Africa with over 1,200 registered schools. The local programme is fully integrated into the national curriculum and provides essential support to teachers, through a network of node coordinators and regional coordinators.

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Since 2004, the **Midlands Meander Association Education Programme** (MMAEP) has adopted the Eco-Schools framework as a tool to implement learning, improve the management of the school environment and provide a structured way to assess results. The MMAEP currently supports 17 schools in several key areas, including Environmental Education, Life-Skills Education, School Food Gardens, Professional Development Support for Teachers and Winter Schools to improve matric results.

The **Kids in Parks Programme** is a government, private-sector partnership that provides learners from disadvantaged backgrounds and their educators with a unique ESD opportunity. They visit a national park and learn about their natural and cultural heritage. The three-day programme allows for discovery, learning and educational fun for learners.

The **Kudu Green School Initiative (KGSI)** is a new ESD programme that is targeted at urban school children. The programme involves schools setting up an ESD committee comprising parents, teachers, and learners who work collaboratively on school-community projects. The committees explore the nature of their urban environments and the relationship between nature and people in urban settings. Teachers who belong to these KGSI committees are also involved in an accredited professional development

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programme that focuses on designing and implementing environmental learning programmes.

"Bontle ke Botho" (BKB) Clean and Green Campaign is a Gauteng provincial government, 3-tiered ESD programme that involves school, community wards and municipalities in a comprehensive effort mobilising communities to prioritise actions that will improve their local environment. The programme facilitates and encourages collaboration between schools and ward committees. Over the life of the programme, it has become institutionalised in provincial and local governments in Gauteng, and municipalities are now employing BKB co-ordinators. The integration of wards has mobilised commitment and involvement of ward councillors, and the programme has been sustained over the last 7 years on the provincial budget.

Grounded in the Grade 11 geography curriculum, the **Energy Dialogues Programme** is focused on engaging teachers and learners in a multi-faceted programme that involves support to curriculum staff, teacher development and a comprehensive education programme for learners. Following the training programmes, the teachers and learners need to work together to plan and develop a school-community energy campaign that encourages dialogue, debate and community action around climate change.

2020 Vision for Water, Sanitation and Forestry Programme is a joint national government programme run by the Department of Water Affairs in partnership with the Department of Education. The three main components of the programme are: curriculum support to schools with resources; intervention projects in schools and communities and national action projects for water such as the South African Youth Water Prize.

The **Greening the Nation Programme** involves establishing school gardens of indigenous plants, vegetables and fruit trees for nutrition as an educational resource. Teachers and learners are encouraged throughout the process to use the garden as a resource for teaching and learning. The programme has contributed to job creation and skills development in local communities.

Through its innovative capacity building programme, **Cape Action for People and the Environment (CAPE)** has piloted many initiatives focused on human capital development for the environmental education sector. This programme has produced a number of resources to help teachers (and their environmental partners) to interpret and work with the environmental learning objectives in the curriculum.

ESD Educational Resources Network

A strong culture of resource-based learning has permeated the ESD community in South Africa. The WESSA (Wildlife and Environment Society of South Africa) Share-Net is an innovative South Africa-based, informal networking project that supports ESD through an open ESD learning resources network. Resources, developed by various ESD stakeholders, are contributed to the network and become available for the ESD community to utilise at very reasonable cost recovery prices.

Share-Net resources are copyright-free for educational purposes. The wide range of environmental materials include exploratory fieldwork guidelines, information and ideas for environmental action, an indigenous knowledge series, concise enviro-facts designed around key environmental issues, teaching guides that provide teachers with a range of learning activities and ESD professional development resources that support policy and curriculum development.

HIV and AIDS Education

HIV and AIDS can have a debilitating effect on education. In the face of this educational crisis, co-ordinated measures have been introduced into the education system to combat the disease, with a focus on prevention. Among the general strategies of the National HIV and AIDS Plan is the inclusion of "an effective and culturally appropriate information, education and communication (IEC) strategy" (Department of Health, 2000). A national policy on HIV and AIDS for Learners and Educators in Public Institutions urges all institutions to have a planned HIV and AIDS strategy. It recognises the duty of the State to ensure that schools are safe places in terms of physical protection from the virus and where there is adequate information and education on HIV and AIDS. Schools are urged to establish health advisory committees responsible for developing and promoting a school plan for implementing HIV and AIDS prevention measures and generally advising the school governing body/council on all health matters, including HIV and AIDS.

Each provincial department of education is expected to designate an HIV and AIDS programme manager with responsibility for implementing the department's HIV and AIDS programme. In addition, a strategic framework for a South African AIDS youth programme has been developed. National curriculum policy advocates that HIV and AIDS education be taught in the context of lifeskills/life orientation education and be infused throughout the curriculum. Its primary objectives are prevention of the spread of the virus and reduction of stigma and discrimination.

Soul City is a multi-media 'edutainment' and development communication programme, which combines radio, television, newspapers and magazines to impart messages and to advocate public policy on health. The programme works with various partners and is well-known in HIV and AIDS education in South Africa.

The 'edutainment' part of the programme is complimented by an extensive education and training component that provides accredited training in all 9 provinces to community trainers who work with the Soul City education pack in schools and communities. Once trained, these community trainers use the resource pack at local levels to facilitate HIV and AIDS prevention training. This comprehensive education pack has become a mobile resource for training and, through the Soul City programme, has assisted in establishing an extensive HIV and AIDS training network across the country.

ESD in Further Education and Training

In national educational planning, further education and training (FET) is a priority sector as it concerns post-school young people between the ages of 16 and 24 and in particular those who have left the schooling system. Estimates are that currently 2.8 million or more 18-to-24-year-olds are not in employment, education or training. The National Plan for FET commits government to increasing enrolment of young people and adults in FET colleges and programmes, to reach one million by 2014.

Traditionally a significant portion of FET training in the ESD sector took place outside of state education and training institutions. It was provided by NGOs, and/or consulting or training agencies, often in partnerships with the state or with higher education institutions. While much of this training is vocational in nature, and much falls within the FET (Level 4) band, there is also considerable overlap with higher education-level training and adult basic education and training-level training.

Some examples of NGO-driven ESD programmes that are directly within the scope of vocational/FET include the following:

- The South African Wildlife College, a non-state training institution providing field ranger and protected area management training for employees within the (Southern African Development Community (SADC)).
- The Field Guiding Association of South Africa (FGASA) trains field guides. FGASA is currently involved in the training of marine and nature guides, in particular unemployed people from the Northern Cape and Southern Cape, in partnership with WWF, the provincial para-statal CapeNature, and other parties.
- SANParks and provincial para-statal conservation agencies train contractors to clear invasive alien plants for the Expanded Public Works Programme (EPWP), Working for Water and other initiatives to control invasive alien plants.
- The Green Futures Horticultural and Life Skills College is an example of a partnership between a privately owned nature reserve and an international funder; it strives to create conservation-related employment by offering

12-month programmes in gardening and landscaping using indigenous plants.

In 2010, the Minister of Higher Education made an urgent commitment to integrating training for a green economy into technical and vocational colleges in South Africa. Green jobs and occupational training in the FET sector is a state priority. Following this there have been attempts to institutionalise ESD related training in state institutions, as depicted in the example below:

The Central Johannesburg College (CJC) is training young people for artisan opportunities in green industries. Training of the first group of 20 young people in solar geyser installation started in May 2010 at the Alexandra Campus, spurred by the Department of Minerals and Energy's project to install one million household solar geysers by 2014. The training aims to provide innovative solutions to workforce development needs by promoting green career and business opportunities for young people. CJC initiated a business plan competition for 50 young people around the theme of green innovation. The scope of green retrofitting includes installation of photovoltaic technology, solar geysers, water harvesting and low-energy lighting and cooling systems, to meet international compliance standards.

ESD in Higher Education

In South Africa, there is a growing interest in how universities are responding to sustainability issues. The international drive to review operational and educational efforts in sustainable development has gained considerable impetus nationally and has stimulated an urgent need for a co-ordinated initiative in South Africa. Hence the Green Campus SA conference held in January 2012 has facilitated the discussion around "green" innovations and helped in the assessment of the current status and achievements of South African academic institutions for benchmarking future progress. It will also facilitate the elaboration of a national charter and the establishment of a network of academic institutions in order to catalyse and co-ordinate the South African green campus movement.

Two examples of higher education sustainability programmes are discussed briefly below:

The Environmental Education and Sustainability Unit at **Rhodes University** has been conducting post-graduate research in environmental education and offering graduate and post-graduate teaching (scholarly functions) through the Murray and Roberts Chair of Environmental Education, in the Education Faculty. It also offers open-access courses at Level 5/6 through the Gold Fields Environmental Service Centre, to meet the need of organisations in the sector for entry-level environmental education staff.

Through the leadership of the Environmental Science Programme, a multi-disciplinary Environmental Forum was established. Various sustainability practices

are visible on campus; for example, waste recycling, water conservation, use of bio-fuel, sustainable landscaping and integrated pest management practices. Students are also getting more involved in sustainability initiatives; as shown by the establishment of various environmental societies and the creation of a dedicated environmental portfolio in the Student Representative Council. Furthermore, a Green Fund has recently been established for the university.

Of interest too is the range of environment and sustainability modules offered in a wide variety of disciplines, such as geography, ichthyology, anthropology and history. There are also a number of interdisciplinary research initiatives which focus on the interface between the natural, social and economic sciences, and various research innovations, such as those of the Environmental Biotechnology Research Unit.

The successful work of the Environmental Education and Sustainability Unit, including its local community projects and provincial emphasis, has led the Institute of Advanced Studies of the United Nations University (UNU-IAS) to recognise the Unit as a Regional Centre of Expertise (RCE) in ESD in the Makana municipality and Rural Eastern Cape. A second RCE in South Africa is the RCE KwaZulu Natal. It manages and coordinates the South African Development Community's (SADC) Regional Environmental Education Programme (REEP), which supports environmental education processes in 14 southern African countries. The RCE also supports the development of RCEs in other southern African countries. WESSA is the lead organisation of the RCE KwaZulu Natal.

The **University of Cape Town's (UCT) Green Campus Initiative** is a programme that aims to make UCT a sustainable and environmentally-friendly institution. Some of the projects include:

- **Ridelink** not only encourages carpooling, but also the use of bicycles and public transport. In addition, the programme has launched an online database that matches people from similar areas so that the logistics of carpooling is much more manageable.

- The Green Campus Initiative has partnered with the state-owned utility Eskom to launch the **Energy Challenge** programme, where student residences compete to reduce their total energy consumption in an allocated period of time. The residence that can reduce its electricity bill the most wins a prize.

- The Building-to-Building Road-show targets buildings on campus one by one in order to raise awareness about climate change and suggest ways for greening the building (such as setting up a recycling system, reducing energy use and encouraging carpooling among staff).

Furthermore, a number of South African universities participate in the **Mainstreaming Environment and Sustainability in African Universities (MESA) Partnership** (see p. 75, Partnership Initiatives that support ESD).

Environmental Science and Sustainability Masters Degrees

A recent review of Masters degrees in Environmental Science and Sustainability initiated by the Department of Science and Technology revealed that approximately 50% of South African universities are offering Masters programmes in environment and sustainability sciences and that an equivalent percentage are offering specialist water management, water sciences and water engineering programmes.

Another interesting feature is the strong focus on inter-disciplinary programmes that have a good mix of socio-economic and natural sciences, and address various dimensions of the environment (ecological, social, economic and even cultural issues). This reflects the nature of environmental issues and risks which are essentially socio-ecological and complex in nature. These courses are therefore a potential site for curriculum innovation in higher education. In general the bias of the courses is towards science, management and/or policy. Not enough attention is being given to society, culture and economics. The degrees also tend to have an applied science focus, and an interest in addressing current environment and sustainability challenges.

Some of the degrees promote hands-on experience through practical and fieldwork activities. Hands-on experience is an important quality in environmental sciences and a few innovative examples of accredited community work sessions, and learning in context, were noted. In comparison with international degrees of a similar kind, the South African Master's degrees were generally weakly oriented towards work-integrated learning, a key weakness identified by institutions in the sector.

The study also identified an emerging trend towards greater co-operation among higher education institutions, community-based organisations and local government.

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Setting a Research Agenda

The Global Change Grand Challenge National Research Plan has identified areas of research and knowledge development in South Africa (in line with the drive towards a knowledge economy). Four key knowledge challenges are identified to guide research and associated capacity development initiatives in higher education: Understanding a Changing Planet, Reducing the Human Footprint, Adapting the Way We Live and Innovation for Sustainability.

The framework requires a mix of science, economy, technology and social research skills and is therefore essentially multidisciplinary.

Some of the key actions linked to the research plan and priorities are to expand research capacity; provide undergraduate career guidance; support development of a multi-institutional Masters course in Earth Systems Science and Sustainability; support and promote work-integrated learning and pedagogical content development; and support and implement a youth development programme for Grade 12 students in rural provinces who have passed maths, science and technology and geography but are failing to access higher education.

Creating Learning Pathways for Environmental Careers in and for Workplaces

The achievement of the government's strategic sustainable development goals will be meaningful only if the quality of education and occupational skills is simultaneously elevated throughout the national learning system. To enable South Africa to deliver on its international agreements, to ensure that South Africans have the skills needed to provide leadership, policy and institutional frameworks for effective service delivery in the environmental sector as outlined in the National Environmental Management Act, it was necessary to take stock of the skills gaps, supply and demand in the broad environmental sector. The next section highlights the integrated approach to analysing and addressing issues of skills development in South Africa.

Environmental Sector Skills Plan (ESSP)

The Department of Environmental Affairs, as the lead agent for the environmental sector in South Africa, spearheaded a large-scale study to inform skills planning and provisioning for the broader environmental sector so that the country can deliver on its environmental mandates.

The ESSP a) describes the current 'status quo', with regards to demand and supply of environmental sector skills, including best available information on scarce and critical environmental skills, and b) provides guidance on improving environmental

sector skills development planning and implementation within the national education, training and skills development system.

The ESSP adopted a systems approach to skills development planning. It addressed skills development demands at high level; intermediate level; and elementary level to ensure that adequate attention is given to the required 'mix' of skills in the environmental sector, as the South African labour market is highly differentiated.

The ESSP also promotes a cohesive, future-directed national system of environmental skills development that addresses:

- Policy and strategy issues,
- Quality assurance and education and training supply issues,
- Human resource development and workplace skills planning issues, and
- Monitoring and evaluation of skills development outcomes and demands (Department of Environmental Affairs, 2010b).

The ESSP has provided an 'anchor reference point' for related skills development strategies and provides a set of principles to guide skills development planning in the environmental sector. In order to strengthen the human capital development pipeline for this sector, key strategic objectives and actions are being prioritised, including:

- expanding knowledge of environmental careers in schools and universities,
- ensuring that adequate attention is given to public awareness of ESD and ESD in schools, in teacher education and for young people in rural areas, and
- utilising the Department of Environment Affairs' (DEA) Environmental Learning Forum as a mechanism to enhance the quality of environmental education and training in the South African education and training system (Department of Environmental Affairs, 2010b).

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A National Environmental Skills Forum, consisting of government and civil society partners, has been convened to spearhead sectoral and cross-sectoral needs, gaps and bottlenecks related to skills planning for the

environmental sector and to ensure more co-operative planning and implementation. In short, the Forum aims to strengthen skills planning and development, deal with reactive, insufficient, ad hoc and fragmented skills development across the broad environmental sector, and it aims to support implementation of the ESSP and various human capital development strategies.

Civil Society Interventions/Stories from Communities

The most recent comprehensive study (2002) done on non-profit organizations (NPOs) in South Africa, though somewhat dated, estimated the total number of NPOs in South Africa as 101,289. These NPOs cover various sectors, including health, education, religion, social services, culture and recreation, development, environment, housing and advocacy and politics. NPOs with an environmental focus constitute 3.4% of the NPO sector in South Africa.

The civil society sector in South Africa has played an important role in accelerating the process of environmental reform and providing learning about sustainable issues for individuals and communities. The extensive network of ESD civil society organizations operates at local levels and is essentially co-ordinated through provincial ESD forums. All nine provinces have ESD/EE forums which create platforms for building networks, sharing and co-ordinating ESD efforts and discussing opportunities for collaboration. The forums have served as a reliable provincial mechanism for contributing to policy deliberation and creating access to influence in government departments. Some 120 partner groups are associated with provincial ESD forums across the country which includes higher education institutions, government departments, local governments, NGOs, community-based organizations (CBOs) and para-statal organizations.

A good example of a large-scale national civil society driven ESD programme is the **"Stepping Up to Sustainability" project,** which is a cluster of educational initiatives and training courses which are responding to climate change adaptation and mitigation training needs in South Africa. It comprises three interlinking components:

- *Establishment of a 'sustainability commons'* – a 'sustainability commons' is an area of commonage where a cluster of training courses can be held. Physically, the commonage is a venue with a diverse pool of sustainability-focused learning, technologies and tools. The 'commons' concept allows the resources to be used for the benefit of the community and the environment. It can be extended by means of an environmental information portal, and mobile phone technology will be used to help people keep in touch.

- *Capacity building (training courses)* – a cluster of training courses (both South African Qualifications Authority accredited and non-accredited)

focusing on climate adaptation training courses, with a strong practical and change-based orientation.

- *Resource materials (learning support materials)* – development and sharing of resource support materials.

A consolidated government-led community development programme is the **Expanded Public Works Programme (EPWP)**. This is a significant job creation initiative in South Africa and many of the jobs created are in the environmental and culture sector. Implementation of the EPWP programme is focused on engaging poor communities in labour intensive training and skills development so that they can address community issues.

The EPWP model has been successful in creating one million full-time equivalent jobs and has supported the initiation of 3,322 small to medium-sized enterprises into the environment and culture programmes.

ESD and Business

According to the CSI Handbook, South African companies spent 5.4 billion South African Rand (ZAR) on corporate social investment (CSI) in 2009/10, indicating that CSI is a very important part of the South African business environment. Large scale support is provided to key ESD imperatives.

Education Quality Improvement Partnerships (EQUIP). The National Business Initiative (NBI) is a voluntary group of leading South African and multi-national companies working together towards sustainable growth and development in South Africa. Its focus on the role of business in schooling has both a programmatic and a strategic component; through the Education Quality Improvement Partnerships (EQUIP) programme and the facilitation of a dialogue between business and government on the role of business in schooling, respectively. EQUIP supports government in the implementation of its education quality improvement programmes and policies by building the capacity of schools to develop into strong and viable institutions with sound and strategically designed development plans.

These partnerships offer partner schools access to "best practice" in school leadership, governance and curriculum delivery. The EQUIP programme also provides a forum for strategic dialogue between government, educationalists and business to address general educational challenges.

Partnership Initiatives that support ESD

The INWENT/GIZ ESD Network intends to contribute to the conceptual development of ESD, through the exchange of 'experts' from four different countries: India, Mexico, South Africa and Germany. The main aim of the programme is to strengthen

individual competencies and institutional capacities for ESD of organizations, government, non-governmental and non-formal education in participating countries through conferences, networking and further education. An ESD leadership training programme has been set up by the project, whose purpose is to provide a unique exchange and learning opportunity for participants from Germany, India, Mexico and South Africa. Participants are selected from the most promising young professionals in government, research institutions and NGOs in the four countries as potential leaders in the field of ESD.

Another emerging network of African academics, involved in environment and sustainability, is the Mainstreaming Environment and Sustainability in African Universities (MESA) Partnership. The objective of the partnership is the implementation of environmental learning programmes across university disciplines, operations and functions. It became a flagship programme of the United Nations Environment Programme. South African MESA Universities include Rhodes University, the University of Cape Town, University of Western Cape, University of Pretoria and University of South Africa.

Monitoring and Evaluation

South Africa has had a strong tradition in this area, focussing on Grade 12 examination results as a core for education monitoring. With a growing emphasis on monitoring learner performance at the lower grades, the systemic evaluation programme, involving the sampling of Grade 3 and Grade 6 learners, was introduced. In each wave of the systemic evaluation, learners took linguistic and mathematics tests, which were externally marked. This evaluation programme has played an important role in clarifying where the areas of weakness were and the data collected have been used to inform a variety of policy changes, including recent changes to the curriculum.

A new national assessment system, known as Annual National Assessments (ANA) was introduced in 2010. An important aspect of the 2011 wave of ANA was that data from the testing were collected into a national database, which can be used to inform planning and to produce reports that provinces and districts can use to target schools for different kinds of support.

NEEP-GET Formative Monitoring and Evaluation

The National Environmental Education Project for General Education and Training (NEEP-GET) conceptualised and implemented, over a three-year period, one of the largest, most comprehensive formative monitoring and evaluation (FME) processes. The FME team comprised a consortium of higher education institutions which supported capacity development in environmental education for previously disadvantaged universities. The monitoring processes involved contextual monitoring

and longitudinal studies, as well as critical appraisals of key issues emerging from the project. Areas that were carefully recorded and monitored included:

- in-service professional development models and approaches
- contextual approaches to lesson planning
- changes in pedagogy and understandings of learning
- ways of strengthening and encouraging active learning programmes
- re-alignment of learning and teaching support materials
- partnerships and partner-based approaches to supporting curriculum
- broad-based perspectives on environment and development issues.

The NEEP-FME process developed many innovative reflective and monitoring tools which have served as critical capital for the ESD community.

Database of ESD Training Providers and Courses

The South African National Biodiversity Institute's (SANBI) Biodiversity Human Capital Development Programme has spearheaded the development of a database composed of training providers and courses relevant to the ESD sector. This comprehensive database assists in making information accessible and also helps to monitor the quality of training across the environmental sector through an on-line evaluation. Participants attending listed courses are encouraged to complete the on-line course evaluation which will allow the sector to monitor relevant ESD courses.

4. Key Observations

This section highlights some of the key strengths, opportunities and weaknesses of ESD implementation in South Africa, as well as the threats it faces.

Strengths

- ESD is articulated comprehensively within national curriculum policy in South Africa. The relationship between human rights, healthy environments, inclusion and social and environmental justice is clearly articulated.
- ESD-related issues have moved from marginal to mainstream in broad policy discourses (education, environment, economy, science and technology).
- At different levels of the education and training system, emphasis is placed on learning, education, awareness and skills development for strengthening

sustainable development practices in different sectors – water, waste, planning, climate change, science and technology.

- South Africa disposes of strong informal practice-based networks in provinces involving collaboration between different ESD stakeholders. The National Teacher Development Network, consolidating efforts of all major ESD stakeholders, is a strong tool to support teachers' competencies in teaching the environmental component of the South African national curriculum.
- The ESD sector is very innovative. It has mobilised pioneering conceptual development of ESD in higher education, schooling, in-service teacher training and in workplace learning systems.
- A conceptualisation and shift towards change-orientated learning is taking place.
- A strong culture of resource-based learning – open resources network, online availability of materials and resources (SHARE-NET; CAPE) exists and supports the ESD sector.
- South Africa has flexible curricula that enable contextualised learning opportunities and integration of indigenous knowledge.
- The government supports private sector innovation regarding sustainable development practices.
- The scope of ESD research and range of ESD offerings in higher education is being expanded.

Opportunities

- Based on the numerous efforts and initiatives that have been taking place, there is need for establishing a comprehensive national monitoring system of ESD practices that can monitor progress, gaps and quality of ESD implementation.
- A more intensive focus should be on developing capacity of school management teams. ESD systems should be enabled to be integrated into existing school monitoring approaches.
- Another opportunity lies in strengthening ICT to support ESD learning and using social networking and media to promote ESD and lifestyle choices.
- Strengthening inter-ministerial collaboration could further enable systemised support for ESD.
- The new policy focus on TVET creates various opportunities for intensifying ESD within the Further Education and Training sector.

- Most current learning pathways to ESD careers are postgraduate, thus more opportunities should be created for entry level pathways in higher education.
- ESD has an emerging presence across the education and training system – schooling, higher education, pre-service, in-service and in skills development provisioning systems; however, these need to be bolstered and reinforced.
- A further opportunity lies in an increased investment in early childhood development (ECD), and more programmes that integrate ESD into schooling in early years.
- Coordinated approaches to support career guidance in ESD jobs should also be developed.

Weaknesses

- The absence of a national ESD strategy and coordinating 'body' has hampered coordination at national and grass-root levels. There is a tremendous amount of work happening on the ground but it is disconnected from the national space and up-scaling and uptake into national systems has been inconsistent. The lack of a national strategy also creates numerous monitoring difficulties.
- The lack of a funding driver has resulted in insufficient financial resources to facilitate ESD implementation. The funding of activities is mainly ad-hoc, provided essentially by the private sector and mostly short term (1-2 years).
- There is a lack of a creative mechanism to engage stakeholders, like media and business, in the implementation of ESD.
- Reorienting curricula towards ESD has happened at some levels in higher education (e.g. Masters degrees), however more emphasis needs to be given to curriculum reviews in undergraduate education degrees.
- So far there is an insufficient up-take into official training systems that support curriculum change – e.g. teacher training and training of curriculum officials.
- The ESD opportunities presented within national policy frameworks have been well utilised by NGOs and government agencies to support schools and teachers. Teachers with enough exposure, interest, knowledge and assistance manage curriculum-related ESD very well; however, teachers whose initial training has been inadequate, struggle to make coherent sense of ESD in the curriculum, even after ESD interventions.
- A great emphasis has been placed on reflecting upon teaching methodologies, however innovative assessment practices have been neglected. There is a need to review and update assessment processes.

- Systems for monitoring the quality of teaching in classrooms, to enable a review of learner work and impact of ESD on learners, need to be strengthened.
- More emphasis should be put on development and use of ESD monitoring tools.

Threats

- Poor quality of teaching and learning in some schools as reflected in poor results in some subject areas.
- Teachers' poor foundational knowledge in environmental issues hampers understanding and recontextualising of ESD in teaching and learning.
- Inundation of school-based ESD projects, overburdening teachers, especially with projects operating outside of school curriculum.
- Out-of-school youth, children who leave the education system, are a key concern for the Department of Education and of critical importance in the process of upgrading skills and educational levels across South African society. The majority of out-of-school youth are in the age group 14-18.

Lessons Learnt

Along the journey to ESD implementation, some valuable lessons have been learnt, which are summarised below:

Reorienting Curricula for Teaching and Learning

- A systemic approach to improving the quality of teaching and learning in South Africa is necessary; an approach that extends beyond policy to solid implementation strategies and local actions.
- Integrated programmes that link poverty eradication with community change are important. There is a need to support ongoing skills development competencies, especially in rural communities where issues of food security are linked to education.
- Supporting change-oriented learning and teaching is essential. Participatory pedagogies are important.
- Analysis of contextual issues could be improved. Testing of different tools/methods to analyse contextual issues (e.g. mapping local environments, audits, photo mapping) would be useful.

- The development of content knowledge around sustainability practices should be supported. Educators need to be supported in their comprehension of ESD and when situating it within the curriculum.
- Engage with classroom cultures and practices. Experience has highlighted that these issues are critical to supporting learning and implementing ESD processes.
- Assessment of learning – while much effort was put into designing learning opportunities and integrating ESD, assessment processes for learning were neglected.
- ESD facilitators can play an important role as mediators of learning. Therefore, a focus should be on processes that facilitate learning and strengthening knowledge and competencies of ESD facilitators.
- Challenges of work-integrated learning should be addressed. Efforts should be made to align content, practical skills and workplace experiences with workplace sustainability practices.
- Social networking and mobile communications should be explored as platforms for ESD learning.

Resources and Materials

- Creating open and shared systems for educational resource dissemination is of great value.
- In order to strengthen the development of literacy and acquisition of knowledge, a resource-based approach to learning is needed that encourages teachers to adapt and use a variety of learning support materials in lesson planning and teaching activities.

Scope of ESD Sector

- Schools, universities and workplaces are part of a multi-facetted system of human capital development and all facets of this system need attention.
- Use of a broad framework for understanding the environment that integrates social, ecological, political and biophysical dimensions of the environment.
- Interdisciplinary programmes that span different sectors and departments have proven to be of central importance.

Capacity-Building

- There is an urgent need to reinforce curriculum support staff. Teacher clusters appear to be most successful when curriculum support staff worked with partner groups to provide ESD support to teachers. The strengthening of capacity at curriculum-official level creates another support mechanism for ESD teachers.
- As stakeholders work with policy, there is a need to support the recontextualisation of policy into practice in different fields (teachers working in different communities, ESD centres, curriculum officials). Efforts should be undertaken to ensure that policy is properly interpreted and understood by these stakeholders.
- Developing applied competence is important. Promoting the 'work together, work away tasks' professional training model can be useful.
- Developing critical thinking skills and competence for reflexivity can be supported by creating spaces for reflection on practice and changes in practice.

Monitoring and Evaluation

- Looking for evidence of applied competence should be promoted. Improved strategies for exploring evidence of learning are needed.
- Portfolios provide a space for collecting demonstrations of learning. They also provided a valuable source of evidence of applied competence. Portfolio development requires assessment of both the process and the product.

Networking and Partnerships

- Regional networking, both formally and informally is important. This is demonstrated by the Southern African Development Community's Regional Environmental Education Programme (SADC-REEP) and the MESA (Mainstreaming Environment and Sustainability in African Universities) Programme.
- Informal networks (district and provincial environmental education forums) have a huge mobilising potential for ESD.

5. Closing Remarks

Levels of ESD awareness have steadily increased across all sectors in South Africa. ESD implementation in South Africa has many successes to celebrate: these include ESD's integration into policies and its synergy with developmental priorities, the strong multi-stakeholder ESD community, the emergence of high quality educational processes and learning resources that support ESD and the innovative research-based orientation towards ESD practice.

However, these pockets of ESD innovation that have emerged over the years have struggled with uptake and scaling-up potential. This uptake has been inhibited by a lack of national coordination and a lack of a consistent funding driver for ESD. The drive to integrate ESD into policy has also not coherently followed through with implementation processes and training because of the lack of a consistent national coordinator.

There are many opportunities for strengthening ESD in South Africa and these need to be spearheaded by an inter-governmental national co-ordinating committee that works collaboratively with the very strong ESD community.

SWEDEN

Elisabeth Aaro Östman and Leif Östman

1. Introduction

Sweden is one of the five 'Nordic countries', located in the middle of Scandinavia with a population of approximately 9.5 million and an area of 450,000 km^2, 15% of which is north of the Arctic Circle. Only 3% of the Swedish area is built-up, 53% of the area consists of woodland, 9% of lakes and 8% is used for agriculture.[29] The country has an extensive coastline along the east and south, with many watercourses and lakes, the latter providing most of the drinking water. It has a

29 http://www.scb.se/Pages/PressRelease____254451.aspx. Accessed 20 January 2012.

market economy, with both state-controlled companies and privately controlled primary and secondary sector industries. Sweden has a political ethos of high social responsibility and is well known for its social welfare models.

Sweden's experience of Environmental Education (EE) and Education for Sustainable Development (ESD) is extensive and quite long. The country also has a strong network of ESD researchers and a unique post-graduate school on ESD. Due to this context, plus the large number of national stakeholders, this case study report can only present a sketch of ESD achievements in Sweden. In order to make it possible for the reader to obtain more knowledge on ESD-activities and policies in Sweden, we have included Internet sources where the interested reader will find more detailed information.

2. Background

Before the 1960s, nature and environmental protection issues dealt mostly with hydroelectric power and untouched rivers in the north, gravel extraction and protection of species and biotopes. There was not much public interest in, education about, environmental issues until 1962, when the publication of Rachel Carson's landmark book *Silent Spring* (translated into Swedish in 1963) became an eye-opener of great importance. A few years later, Swedish researchers published similar sensational reports about pollution. Since then there has been a change in orientation and concepts regarding environmental issues. Before and during the 1960s, activities were focused on nature protection and conservation, with the belief that nature should be protected against humans. In 1967, the Swedish Environmental Protection Agency (Naturvårdsverket) was established. When pollution became an urgent issue at the end of the 1960s, interest turned to the question of how to protect the environment while also protecting the welfare and health of humans. This change is also visible in legislation: Sweden passed a new nature conservation act in 1964, which was replaced by the first environment protection act in 1969.[30]

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30 von Hofsten, 1999.

Environmental Education

We can see a similar development in education. The elementary school was established in Sweden in 1846. The very first signs of EE in Sweden can be traced back to the national curriculum of 1919. The plan stressed that pupils should develop respect for nature and awareness of natural resources.31 In 1947, a non-governmental organization (NGO), Nature & Youth Sweden (Fältbiologerna), was founded as a freestanding organization of the NGO Swedish Society for Nature Conservation (Svenska Naturskyddsföreningen). Until the 1960s, these two NGOs, together with the Swedish Environmental Protection Agency, have done important work to develop education on nature conservation. In the effort to implement modern EE in Swedish schools during the 1970s-1980s, they were joined by other stakeholders, for example the World Wide Fund for Nature in Sweden (WWF).[32]

3. National Review

From 1990 to 2006

Educational Acts

An important step for implementing ESD in schools was the amendment of the Education Act (skollagen) in 1990. The new wording implied that everyone active in the Swedish school system has to take into account and relate to the new perspective on environmental issues that considers them to be societal issues.[33] It was in the national curricula of 1994 for compulsory education and for upper-secondary education that ESD and the notion of 'sustainable development' were introduced into the Swedish school system. In 1998, pre-school was embedded in the school system and its first national curricula quoted the Education Act of 1990. The Higher Education Act (högskolelagen) was changed in 2006 with new wording stating that higher education bodies should promote sustainable development to assure for present and future generations a sound and healthy environment, economic and social welfare, and justice.[34]

From Rio to ESD in National Curricula

The Agenda 21 action plan of the United Nations Conference on Environment and Development (UNCED), held in Rio de Janeiro in 1992, had an impact on the new

31 von Hofsten, 1999; Breiting and Wickenberg, 2010.

32 von Hofsten, 1999.

33 Breiting and Wickenberg, 2010.

34 Swedish Code of Statutes (SFS) No. 1992:1434. The Swedish Higher Education Act, chapter 1, section 5.

steering documents for the official school system in Sweden. A book[35] sent to all teachers and headmasters of compulsory and upper-secondary schools in Sweden in 1994, explains that the Swedish Education Act, from 1990, and the recently established national curricula and syllabi, were permeated by the four international agreements concerning human rights, the rights of the child, education about international understanding and environmental education. The reform of the Swedish school system in the 1990s also enlarged the notion of civic competence in the national curricula for compulsory and upper secondary education. Furthermore, both new national curricula stated that teaching and education should illuminate how the functioning of society, and our ways of living and working, can best support conditions for sustainable development.


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For pre-school, school and adult education, the main coordinating body for ESD at the national level is the Swedish National Agency for Education (Skolverket). Since the mid-1990s, it has integrated ESD into the Swedish school system, implementing it through national curricula and the syllabi.

Sweden as a Driving Force for Baltic 21E

Based on a Swedish initiative,[36] the ministers of education of the Baltic Sea Region[37] agreed in March 2000 to develop an Agenda 21 Education Programme. Two years later, the *Agenda 21 for Education in the Baltic Sea Region (Baltic 21E)* was sent to Swedish politicians responsible for education in all municipalities and to all schools in the official school system, as well as to liberal adult education institutions ('folk high schools' and adult education associations). The detailed action programme of Baltic 21E focused on the development of ESD in the Baltic region, with governmental responsibility for its implementation in each member country.

In 2002, the Swedish government presented the first national strategy for sustainable development which brought together social, cultural, economic and environmental perspectives. The strategy targets lifelong learning skills and knowledge as a means of contributing to sustainable development. It recognises the school system as being pivotal in supporting sustainable development and

35 Skolverket (National Agency for Education), 1994.

36 Lindberg, 2012. Mr. Lindberg was a member of the former UNESCO High-Level Panel on the Decade 2005-2014 on ESD and a special advisor for the Swedish National Commission for UNESCO.

37 The Council of the Baltic Sea States (CBSS) was formed in 1992 and consists of 11 member states. http://www.cbss.org/CBSS-The-Council/history. Accessed 20 February 2012. As a follow-up to the United Nations World Summit in Rio1992, the CBSS initiated a regional Agenda 21, Baltic 21, in 1996 (Baltic 21E, p. 4).

emphasises that an important task for the whole education system is to implement the action programme of Baltic 21E.[38]

The UNECE Strategy

A few weeks after the national strategy for SD had been presented at the World Summit in Johannesburg in 2002, the United Nations Economic Commission for Europe (UNECE) voiced its interest in developing a joint strategy for its 56 member countries, of the same type as Baltic 21E.[39] The UNECE strategy for ESD was adopted in 2005 and translated into Swedish in the same year.

A Committee on ESD

Another important step in the Government's promotion of ESD was the appointment of a committee on ESD in 2003. The Committee's mission was to review and analyse how education systems, at all levels, could work to promote development that is economically, socially and environmentally sustainable, to organize an international meeting on ESD (which took place in Gothenburg 2004) and to submit proposals to stimulate the dissemination of ideas on sustainable development throughout the education system. The comprehensive committee report was delivered at the end of 2004.[40]

A National Award for ESD

In 1998 the government decided to set up a Green School Award for pre-schools, compulsory schools, upper-secondary schools and municipal adult education centres. The initial purpose of the award was to introduce an additional incentive for encouraging ESD.[41] Award criteria encompassed the overall approach adopted by the school, i.e. both teaching as such and the school as a workplace with its physical and psychosocial environment.[42]

In the beginning of 2005, the Green School Award was replaced by the Sustainable School Award, with revised and fewer criteria. The shift aimed to help remove obstacles experienced by the target group and showed an improved integration with the schools' mandatory annual quality report to the authorities. Until the end of 2006, the National Agency for Education was providing substantial resources to support the target group with supervision, materials, regional seminars, and to evaluate the work of the target group aiming to obtain the award. Efforts were also

38 Regeringskansliet (Government Offices), 2002.

39 Lindberg, 2012.

40 SOU 2004:104 (there is an English summary on pp. 19-29).

41 Regeringens skrivelse 1998/99:5 (Written communication from the Government, 1 Oct. 1998), p. 23.

42 Skolverket (National Agency for Education), 2001 a, b. The latter contains the criteria for the Green School Award.

made to support a growing national network of local/municipal resource persons with responsibility for developing ESD. For example, annual national meetings offered information about the award, workshops and exchange of local experiences and good practice.

From 2006 to the Present

A Political Change in Education

A considerable change in national policies regarding education and teaching issues, including ESD, occurred after the change of government in 2006/07. The new government stressed the importance of national campaigns to improve learning and discipline in schools, made large investments in information technology for schools, launched a major drive to strengthen subject-oriented in-service training of pre-school, primary and secondary school teachers, increased national testing and introduced earlier grading of pupils and students. In order to achieve these goals, the National Agency for Education was split into two autonomous State authorities – the National Agency for Education and the Swedish Schools Inspectorate (Skolinspektionen).[43]

ESD in National Steering Documents

The new national curricula for pre-school, compulsory school and upper secondary school (which includes vocational education) have been implemented since autumn 2011.[44] The national steering documents for formal adult education still undergo reforms. ESD, in the formal education system, begins in pre-school, with a focus on the ecological and the social dimensions of sustainable development. Democratic, ethical, environmental and international perspectives permeate the three national curricula. In comparison with the curricula and syllabi for the formal education system in the 1990s, the sustainable development theme has clearly been enlarged in the present steering documents.[45]

National Tests

Together with universities and university colleges, the National Agency for Education is working on new national tests and assessment guides for teachers. The directive for the new tests for compulsory schools indicates that issues on

43 Breiting and Wickenberg, 2010.

44 Skolverket (National Agency for Education), 2011a, b, c.

45 Interview with Thomas Krigsman, National Agency for Education.

sustainable development may be included in a test one year but not in the next – or vice versa.[46]

The Situation Today

To sum up, we can make the point that there is good support for ESD on the policy level – with one exception: in 2010, the present government removed the former wording about 'everyone's responsibility for the environment' in the Education Act, and the notion 'sustainable development' was not added.[47] The long tradition of EE, the ambitious and realised goals for sustainable development *and* ESD of the former government, and the changeover to ESD in the national curricula in the mid-1990s, have resulted in many examples of good practice in the educational arena as well as among stakeholders. Pre-schools and schools at primary and secondary level show a continuous and growing interest for the two ESD awards (Green Flag, see below, and the Sustainable School Award), and stakeholders such as The Global School (Den Globala Skolan) arrange frequent joint seminars on ESD with other local, regional and national stakeholders.

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Apart from the possibility to integrate ESD issues into the national tests for compulsory schools (see above), there are at least two examples of other stakeholders dealing with ways to measure ESD progress: first, 83 of the 290 Swedish municipalities are members of the National Association of Swedish Eco-municipalities (Sveriges ekokommuner). This network has 12 'green indicators', of which one measures the percentage of environmentally approved pre-schools and schools with Green Flag and/or the national Sustainable School Award.[48] These indicators will soon be revised. Second, in the strategy on sustainable development of the Nordic Council of Ministers, education is one of the prioritised areas. The Council stresses that the Nordic countries will "lead the way in the UN decade of education for sustainable development

46 The directive is to integrate issues relating to *all* knowledge requirements/abilities' and to a *selection* of the 'core content' in the syllabi. The 'abilities' are, in all syllabi, announced immediately before the 'core content'. See, for example, the syllabi of Geography in compulsory school, in Skolverket 2011a, pp. 150-1 (in English). The last of four 'abilities' has clear wording for sustainable development, which means that coming national tests in Geography will include task(s) on sustainable development every year.

47 A new notion is 'the human rights'.

48 http://sekom.sekom.nu/index.php?option = com_content&task = view&id = 41&Itemid = 50. Accessed 26 February 2012.

2005-2014".[49] The number of schools awarded with Green Flag serves as an indicator – with Sweden taking the lead.[50]

ESD in Formal Education

As mentioned above, ESD is incorporated into the national steering documents for the Swedish formal school system (pre-school, compulsory school, upper secondary school and municipal adult education). Since 1970, vocational education is integrated into upper secondary education with a joint national curriculum. All higher education institutions shall address sustainable development. This means that the whole formal education system[51] is obliged to integrate issues and themes on sustainable development into their main activities. There is also a wide and growing range of public authorities, NGOs and networks that are engaged in and support ESD. This section will present some of them.

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Support for ESD

The Sustainable School Award

As mentioned above, the national Sustainable School Award replaced the Green School Award in the beginning of 2005. The award is administered by the National Agency for Education and aims to support and inspire pre-schools, primary and secondary schools and municipal adult education bodies to develop ESD. The award has two sets of criteria and is based on a concept that is in line with national curricula and comprehensive development of quality management:

Educational Leadership

The following criteria concern the responsibility of the educational leadership (school head) to lead and develop ESD:

49 Nordic Council of Ministers, 2009a, p. 31.

50 Nordic Council of Ministers, 2009b (in comparison with the total number of schools in a country, Iceland had proportionally the greatest number of schools in the programme. The latest result is shown at http://www.norden.org/en/nordic-council-of-ministers/ministers-for-co-operation-mr-sam/sustainable-development/indicators-for-sustainable-development/education-and-research-public-participation-and-local-sustainability-strategies/number-of-schools-with-the-eco-schools-green-flag. Accessed 23 February 2012.

51 More information about the Swedish education system (in English): http://www.skolverket.se/2.3894/in_english/the_swedish_education_system. Accessed 23 April 2012 and Regeringskansliet (Government Offices of Sweden), 2009.

- The whole pre-school/school is organised so that each child, student and educator can actively participate in ESD.
- There are strategies for introducing and involving new staff in ESD.
- Proper in-service training in ESD is offered to staff.
- The pre-school/school disseminates its experiences of ESD and cooperates with other stakeholders in the field.
- The requirements for ESD, as stated in national policy documents, are evaluated and analysed. Measures for further ESD development are specified.

Teaching Approach

The following criteria concern the responsibility of educators to develop teaching approaches for ESD:

- Children, students and educators are all actively participating in planning, implementing and evaluating ESD.
- Children and students have a clear and active role in ESD and are given the opportunity to influence their own learning process.
- There is continuous cooperation with the local community.
- ESD development work is continuously documented and the requirements for ESD, as stated in national policy documents, are evaluated and analysed. Measures for further development are specified. These findings are reported to the management.

In order to retain the award, a new application is necessary triennially. The Agency provides a website with information about the concept, a presentation of awarded pre-schools and schools and some supporting publications. The current number of schools nationwide that have received the award is 400. A number of municipalities have set the goal that all their public pre-schools and schools shall obtain the award. One of the most successful municipalities in this regard is Umeå in the northern part of Sweden: 90% of its 110 public pre-schools and schools have received the award.

Eco-Schools Green Flag Programme

The Eco-Schools programme started in Europe in the early 1990s and was introduced in Sweden as the 'Green Flag' programme in 1996, coordinated by the Keep Sweden Tidy Foundation (Håll Sverige Rent). Today, the Green Flag award is a programme for pre-schools and schools that aim to raise pupils' awareness of sustainable environmental development issues. It is also a system for environmental management, inspired by the ISO14001 and the European Eco-Management and Audit Scheme (EMAS) approach. The Green Flag concept focuses on six themes: climate and energy, consumption,

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recycling, lifestyle and health, local environment, and water resources. In order to receive the award, the school has to do the following: start an environmental committee (miljöråd), choose one of the six themes, develop an action plan and, after working with the chosen theme for 6-18 months, apply for the Green Flag. The Green Flag comprehensive website provides information about the concept, a presentation of pre-schools and schools that have received the award, and supporting publications and videos. The current number of pre-schools and schools in the Green Flag network is about 2,500.[52]

The Young Masters Programme on Sustainable Development

The Young Masters Programme on Sustainable Development (YMP) is a well-known web-based, interactive distance-learning course for students aged 16-18 all over the world. The programme is, in collaboration with UNESCO, run by an international and multidisciplinary institute at Lund University in Sweden. The course, which is divided into four parts, focuses on issues related to sustainable development and preventive environmental strategies.[53] YMP's vision is "to draw on the experiences since the start of the programme in 1999 and move forward to create the largest, most comprehensive and exciting distance education [programme] on sustainable development in the world."[54] Until now, about 20,000 young people in more than 110 countries have participated in YMP.[55]

Until now, about 20,000 young people in more than 110 countries have participated in the Young Masters Programme on Sustainable Development.

The GLOBE Project

The GLOBE Project was established in 1995 by an initiative of the former American Vice-President, Mr Al Gore. The vision of the project is the creation of a "worldwide

52 http://www.hsr.se/sa/node.asp?node=40. Accessed 26 April 2012.

53 http://www.iiiee.lu.se/education/young_masters_programme_ymp_in_sustainable_development/. Accessed 16 April 2012.

54 International Institute for Industrial and Environmental Economics, 2012, p. 14.

55 International Institute for Industrial and Environmental Economics, 2012.

community of students, teachers, scientists, and citizens working together to better understand, sustain, and improve the Earth's environment on a local, regional, and global scale". More than 24,000 schools in about 111 countries are participating in the project, 51 of them are Swedish schools.[56]

The Baltic Sea Project

Another project, with long-term Swedish participation, is the Baltic Sea Project, which was launched in 1989 on the initiative of the Finnish National Commission for UNESCO. With the acute problems of the Baltic Sea as a starting point, the objectives of the project now include raising students' awareness of environmental problems in the Baltic Sea area, strengthening their holistic understanding of man's relationship to nature, increasing their ability to study changes in the environment and encouraging students to participate in developing a sustainable future. At present, about 200 schools take part in the project, 11 of which are Swedish upper secondary schools.[57]

The Global School

The Global School is part of the International Programme for Education and Training[58] (IPK), a governmental agency promoting academic exchange and cooperation across countries. The Global School, which is present in four regions across Sweden, has been active since 2000 in organizing programmes, seminars, in-service training and global travel for teachers and school heads, as well as for politicians and civil servants at different levels.[59]

The World Wide Fund for Nature

WWF Sweden (from now on "WWF") has been committed to ESD for a long time, both in Sweden and through international cooperation, with a focus on capacity building and a whole school approach. WWF has trained about 4,000 Swedish teachers annually in areas such as sustainable consumption, reducing ecological footprints and participating in the annual Earth Hour event. In cooperation with two museums, WWF has also organized events for schools to share solutions for reducing ecological footprints. For all these educational purposes, WWF has developed a number of materials for students and teachers, some of them also in

56 http://globe.gov/. Accessed 26 April 2012.

57 http://www.b-s-p.org/home/. Accessed 26 April 2012.

58 International Programme Office for Education and Training, 2011.

59 http://www.programkontoret.se/sv/Program-och-stipendier/Program-A---O/Den-Globala-Skolan/. Accessed 26 April 2012.

English.[60] Moreover, WWF has been engaged in developing ESD at university level in Sweden. A WWF booklet,[61] aiming to inspire university teachers, presents ESD examples and experiences from eight Swedish universities and university colleges.

Forskning.se

Forskning.se is a nationwide website providing information on research and research results in Sweden. On this website there is a section called 'The Planet',[62] which deals with the limits, threats and possibilities of the planet Earth. It presents educational stories, illustrative animations and interactive videos. 'The Planet' is the result of a unique collaboration between a film production company, Swedish Public Service Television and forskning.se.[63]

The Swedish Environmental Protection Agency

On the website 'The Environmental Objectives Portal', the national Environmental Protection Agency provides information about the country's 16 environmental objectives[64] and progress towards achieving them. The website includes a section with ESD support for teachers, with a prefatory comment on the interdisciplinary approach for achieving the objectives. Each page in this section has an informative text about a given goal, about relevant school subjects and one teaching example. There is also a list of links to other websites with information and/or teaching aids for ESD.

County Administrative Boards

There are 21 County Administrative Boards (CABs) in Sweden which function as regional representatives of the Government and coordinating bodies for government activities in the county. The CABs have a broad range of responsibilities, of which sustainable development is an important one.[65] Even if there is no government directive for CABs to work explicitly on educational issues concerning sustainable development in formal education, some examples of ESD are integrated into CABs regional work on environmental quality objectives and climate and energy. For

60 WWF ESD materials, translated into English, are available on http://www.wwf.se/utbildning/wwf-education/material/1409051-wwf-education-material. Accessed 3 March 2012. With regard to WWF's engagement in Africa and Asia, the organization has produced a new guide on developing ESD for teachers and other facilitators, and some other materials.

61 Friman and Borgström, 2008/2011.

62 http://apps.forskning.se/InfactPlaneten/index.html?lang=eng. Accessed 23 April 2012.

63 http://www.forskning.se/omwebbplatsen/inenglish.4.303f5325112d733769280001889.html. Accessed 23 April 2012.

64 Swedish Environmental Protection Agency, 2011.

65 More information about the CABs and their work on national environmental quality objectives: http://www.miljomal.se/Environmental-Objectives-Portal/Undre-meny/Who-does-what/County-administrative-boards-and-Forest-Agency/. Accessed 27 February 2012.

instance, the CABs in the counties of Jämtland, Dalarna and Skåne have provided teaching materials and support local initiatives on ESD.

ESD in Higher Education

Higher education in Sweden is provided at about 50 universities, university colleges and other institutions that vary greatly in size and degree of specialisation. ESD, at that level, spans a wide range of disciplines and perspectives. There are also some organizations in higher education providing interdisciplinary specialisation on ESD. For example, there is 'CEMUS', which was launched as a student initiative at the beginning of the 1990s. Today, CEMUS is part of the Uppsala Centre for Sustainable Development,[66] and is still run by students. Other examples of higher education organizations cooperating with different stakeholders on ESD include the Centre for Sustainable Development[67] in Stockholm and the Centre for Environment and Sustainability[68] in Gothenburg.

National Networks and a Joint Platform

There are also some national networks that share an interest in ESD in higher education. The network 'Science for Sustainable Development' (VHU) was formed in 2004 and brings together researchers and educators from diverse disciplines. In 2006, two other national networks were formed: one for teacher educators (LärHut), while the other one, 'Higher Education for Sustainable Development' (HU2), brings together people working on ESD in higher education, civil service departments and national student organizations.

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Some years ago, WWF Sweden created a website on ESD for educators in higher education, which it still manages. The website aims to bring together educators in ESD from all higher education bodies to exchange experiences and good practice and to stimulate dialogue. The comprehensive website includes, for example, news, didactic perspective on ESD, teaching materials, lists of resources on the Internet, research and examples of good practice.

66 http://csduppsala.se/en/. Accessed 19 April 2012.

67 http://www.chu-kth-ivl.se/english/chuenglish.4.6579ab6011d9b20740f8000563355.html. Accessed 20 April 2012.

68 http://www.chalmers.se/gmv/EN/. Accessed 20 April 2012.

ESD in Non-formal and Informal Education

Non-Formal Education for Adults

There are 150 'folk high schools' and 10 study associations in liberal non-formal adult education (folkbildning) in Sweden. Several million Swedes participate in these activities every year. The study associations and 'folk high schools' provide opportunities for lifelong learning through a broad offer of courses and educational programmes, ranging from study circles to multi-year, full-time courses of study at 'folk high schools'. In order to support the development of methods and content for advancing sustainable development in adult education, the Swedish National Council of Adult Education (Folkbildningsrådet) organized the conference 'Sustainable Development– Adult Education for Generations' in 2005.[69] In the Decree on Government Subsidies, 'public health, sustainable development and global justice' is one of seven activity areas given the highest priority by the Government. This activity area was the focus of the Council's national conference on adult education in 2011.[70] The 'folk high schools' and study associations have a long tradition of working on environmental and sustainable issues, which also means that there are many different examples of activities and courses dedicated to sustainability.[71] The publication *In a world worth living in*[72] presents examples of transnational cooperation projects where Swedish study associations and 'folk high schools' have played leading roles. In one of its latest reports to the Government, the Council indicates that all 'folk high schools' and study associations are working on global development issues and are engaged in international work, and that issues of sustainability and human rights are dealt with in courses, study circles and other activities.[73]

Museums

While Swedish museums do take into consideration environmental issues and some economic issues,[74] there is a discussion about the need for museums to become more involved in social sustainability cooperation. The museums' work on sustainable issues is often in cooperation with other stakeholders. The open air museums, for example, have a joint policy on pedagogical activity from 2010, where an ethno-biological perspective on cultural and natural heritage serves as a starting point for work on sustainable development.[75]

69 Folkbildningsrådet (The Swedish National Council of Adult Education), 2006 (in English).
70 Folkbildningsrådet (The Swedish National Council of Adult Education), 2011b (in English).
71 Mustel, 2003.
72 Folkbildningsrådet (The Swedish National Council of Adult Education), 2011a (in English).
73 Folkbildningsrådet, 2012.
74 http://www.sverigesmuseer.se/stafettbloggen/2012/04/pernilla-schedin-en-hallbar-framtid-for-museerna/ – Accessed 18 February 2012.
75 FRI, 2010.

The Church of Sweden

The Church of Sweden[76] has long been involved in issues concerning the social dimension of sustainable development, such as the intrinsic value of human beings, poverty and peace. Over the last few years, the Church has widened its participation in the public debate and non-formal education on sustainable development, as the following excerpt from a policy statement indicates: "Important objectives for the Church are to focus attention on the impacts of climate change on vulnerable people in poor countries and – through direct dialogue with policy-makers, public education and other opinion-forming work – to bring about change."[77] The Church's comprehensive website in this area contains information about why and how the Church works internationally (e.g. on climate change), and provides teaching materials, policy documents and articles.

ESD in Teaching and Learning Processes

In ESD, environmental issues are often considered to create conflict between human interests, which means that these issues are perceived as political ones. Pluralism, which takes into account different views and values when dealing with sustainability issues, democratic processes and critical perspectives, is thus seen as a characteristic feature of ESD. The aim is that pupils/students should develop an ability to critically consider different alternatives and participate in the democratic debate. Pluralism is an important point of departure for ESD, for example, by deliberative discussions in the classroom. By promoting pupils'/students' critical thinking and competences to act, indoctrination is avoided.[78]

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Sami Traditional Knowledge

In 2005, a governmental initiative launched NAPTEK[79], a national programme to support local and traditional knowledge concerning the conservation and sustainable

76 Facts about the Church of Sweden: http://www.svenskakyrkan.se/default.aspx?id = 657773. Accessed 3 March 2012.

77 Church of Sweden, 2008. This and other policies related to sustainable development are available at http://www.svenskakyrkan.se/default.aspx?id = 643494 (in English). Accessed 3 March 2012.

78 Sandell, Öhman and Östman, 2005.

79 http://www.naptek.se/eng.php. Accessed 2 April 2012.

use of biological diversity. NAPTEK collaborates with the Sami Parliament[80] on the so-called 'Sami initiative' which aims to conserve the traditional knowledge of the Sami, an indigenous people. These efforts have so far concentrated on a survey of documented traditional Sami knowledge and customs, lectures, seminars, a methodology book on documentation of traditional knowledge, several other documentation projects and a strategy on increasing the awareness of Sami traditional knowledge.

Research

'Education and sustainable development', a national network of researchers working on EE/ESD, was formed in 2000. During six years, it received financial support from the Swedish Research Council (Vetenskapsrådet). The network's activities included seminars on dissertations, reports, project application and meetings with Danish and British research networks. The network included about 35 researchers from 13 universities and produced 18 doctoral dissertations and two research anthologies.[81]

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The Institute for Research in Education and Sustainable Development (IRESD) offers one of the most expansive and acclaimed research environments for education and sustainable development in Sweden. IRESD was founded in 2006 as a result of over a decade of collaborative research on EE and ESD. Today, IRESD brings together over 20 researchers and doctoral students from the universities of Uppsala, Örebro, Stockholm, and Mälardalen.

IRESD proposed the creation of a unique national graduate school in ESD to the Swedish Research Council. This led to the founding of the Swedish Graduate School in Education and Sustainable Development (GRESD)[82] in 2009, which groups eight universities and sixteen PhD candidates.

The strategy of the Swedish Research Council has been very important for research in ESD. Besides funding the GRESD, the Council has financially supported a number

80 http://www.sametinget.se/english. Accessed 16 April 2012.

81 Interview with Johan Öhman, Örebro University.

82 http://forskning.edu.uu.se/gresd/index_eng.lasso?-session = ACCESS:D54099390a28c2F540LpmME 2C4DB. Accessed 13 May 2012.

of projects on ESD. For several years, it has in particular devoted financial resources to research on sustainable development, including ESD, giving priority to research on teaching and learning.

Partnerships

There used to be partnerships on EE, and later ESD, between the National Agency for Education and other government authorities, but these no longer exist. A new focus of the present government is entrepreneurial learning since 'sense of initiative and entrepreneurship' is one of seven key competences of lifelong learning selected by the European Commission and the Member States' 'Education and Training 2010' work programme.[83] As there are obvious linkages between ESD and entrepreneurial learning, stakeholders are now making an effort to integrate the two.

International Training Programmes

The Swedish International Development Cooperation Agency (Sida) offers advanced international training programmes of strategic importance to sustainable development in partner countries. Within this context, the Swedish consultancy company, Ramboll Natura, runs international training programmes (ITPs) on sustainable development and ESD, in collaboration with international and national stakeholders. The ITP 'ESD in Formal Education'[84] was run as a global project between 2001-2011, with participants from most countries in Africa and Asia, and as a national project in China between 2004-2009. Under the ITP 'ESD in Higher Education'[85] participants spend two weeks in Sweden to learn about ESD processes and research in Sweden and to exchange knowledge and experience with leading Swedish ESD stakeholders. During their stay, interactive lectures and professional debates are combined with excursions and university visits.[86]

The Swedish International Centre of ESD

In 2008, the Swedish International Centre of Education for Sustainable Development (SWEDESD) was established. The Centre is located at Gotland University and financed by Sida. The primary focus of SWEDESD's activities is to support ESD in Sida partner countries with which Sweden has long-term commitments. The mission is to "facilitate the development of the capacity of the leaders, members, employees and other stakeholders of key organizations and communities to carry out educational and communication programmes and interventions allowing people

83 European Commission, 2007.

84 http://www.rambollnatura.se/services/capacity%20development%20and%20training/esd%20in%20formal%20education. Accessed 25 April 2012.

85 http://www.rambollnatura.se/services/capacity%20development%20and%20training/esd%20in%20higher%20ed%202012. Accessed 25 April 2012.

86 Swedish International Development Cooperation Agency (Sida), 2012.

belonging to households, communities and organizations to understand the social, economic and ecological challenges surrounding them and to find appropriate responses and actions."[87]

Former Cross-Border Partnerships

Apart from the examples of partnerships cited above, which are still active, there are several examples of former cross-border linkages between Sweden and other partners in joint efforts to develop ESD. Some of these have already been presented in this report; for example, the action programme Baltic 21E which was launched by the Ministers of Education of the Baltic Sea Region in 2002 and the UNECE strategy on ESD in 2005. Another example is the participation of the Swedish National Agency for Education in the joint project of the international networks 'Environment and School Initiatives' (ENSI) and 'School Development through Environmental Education' (SEED), which defined quality criteria for ESD-schools in 2005.[88] By that time, Sweden had already gained experience with national quality criteria for EE/ESD (since 1999), courtesy of the national Green School Award.

Cutting Edge Education Pilot Schemes in Schools

Since 2009, the National Agency for Education has been selecting proposals submitted by upper-secondary schools nationwide for pilot schemes on cutting edge education (spetsutbildning). So far, the applications of 20 schools have been approved, of which two focused on ESD: the Global College[89] in Stockholm and the Folkunga upper-secondary school[90] in the city of Linköping. As students are entitled to attend courses in higher education institutions under these schemes, building partnerships is a distinct feature of the pilot programmes. At the Global College, students work on interdisciplinary projects with a focus on global issues. For example, the school is collaborating with the Stockholm Resilience Centre and Södertörn University on the project 'Our Future City', where Global College students conducted a survey of the city's districts and then did an analysis using a socio-ecological matrix made by researchers. The students' study generated creative city planning proposals, on which invited experts gave feedback. As a next step, the students are expected to use their knowledge and experience gained from the pilot project in individual citizenship proposals that are to be submitted to the relevant authorities of the City of Stockholm. The Folkunga upper-secondary school collaborates with Linköping University and also with other public authorities, municipalities and companies on ESD issues.

87 http://www.swedesd.se/home. Accessed 26 April 2012.

88 Breiting, Meyer and Mogensen, 2005.

89 http://www.globalagymnasiet.se/index.php?page=english. Accessed 16 April 2012.

90 http://www.linkoping.se/sv/Skola-barnomsorg/Gymnasieskola/Kommunala-gymnasieskolor/Folkungaskolan/In-English2/. Accessed 16 April 2012.

Regional Centre of Expertise

Since 2007, Sweden has a Regional Centre of Expertise (RCE) on ESD, which is located in the county of Skåne in the southernmost part of the country.[91] At present, four other RCEs are planned in Sweden. The vision and goal of RCE Skåne is to make the county a leading national example for delivering ESD. It aims to "contribute to the empowerment of people of all ages in the region to assume responsibility for creating a better tomorrow and a sustainable future."[92] Through a network; universities, cities, the county and other stakeholders working in formal and non-formal education are collaborating on a number of ESD projects.[93] For example, under the Öresund Classroom (Öresundsklassrummet) project about 300 students aged 13-15 and 25 teachers from Malmö, Lund and Copenhagen cooperate on issues of sustainable urban development. The project runs from 2010 to 2013.[94]

4. Key Observations

In order to answer the question if national ESD initiatives have so far been relevant, effective and efficient, one needs to have, as a reference point, clear demands for follow-up results and continuous assessments formulated by responsible authorities. At present, such demands are missing at the national level in the formal education system – with the exception of the upcoming national tests in compulsory school, where sustainable development issues might be integrated into the tests (but not every year). In upper-secondary school, the national tests include the subjects of English, Mathematics, Swedish and Swedish as a second language, thus offering no guarantee for the assessment of knowledge of sustainable issues. The required annual reports of higher education institutions are based on the annual appropriation directives of the Ministry of Education and Research. In spite of the 'sustainable development' amendment included in the Higher Education Act of 2006, no demands for either sustainable development or ESD have been noticed in the appropriation directives so far.

At the end of 2004, the Committee on ESD included a number of assessments and proposals for the development of ESD in the education system in their committee

91 The RCE Skåne is run by Malmö University, the City of Malmö, Lund University, the City of Lund, the Skåne Region/Skåne Regional Council and the NGO Hållbar Utveckling Skåne (Sustainable Development Skåne).

92 http://www.rceskane.se/default.aspx?lang=en-gb. Accessed 20 March 2012.

93 http://www.rceskane.se/?lang=en-GB. For information about the region, regional challenges, decision-making structure, goals and so on, see http://www.ias.unu.edu/resource_centre/RCE%20Skane.pdf. For information about current projects, see http://www.ias.unu.edu/sub_page.aspx?catID=1849&ddlID=1975. All accessed 20 March 2012

94 http://oresundsklassrummet.wordpress.com/in-english/ For more information, see: http://oresundsklassrummet.files.wordpress.com/2011/07/c3b6resundsklassrummet2.pdf. Both accessed 20 March 2012.

report.[95] To date, five of the proposals have been realised: The dialogue on ESD between stakeholders within, as well as outside, the field of education has been developed and deepened. Both the Higher Education Act and the Decree on Government Subsidy for Liberal Adult Education include references to sustainable development. The Swedish International Centre of Education for Sustainable Development (SWEDESD) has been established to act as a nodal point in international networks for ESD. The Swedish Research Council has systematically provided state funding for research on ESD.

Two of the proposals have been partially implemented: The new national curricula (2011) for pre-school, compulsory school and upper-secondary school continue to address sustainable development issues and, overall, the amount of ESD in the school system has increased. On the other hand, with regard to the Committee's proposal, the approach used for ESD is seldom holistic. In line with the proposal for a pilot scheme that focuses on developing ESD in the education system, pilot projects were established in upper-secondary schools in 2009; so far, two applications emphasising ESD have been approved.

Six proposals have not been realised, namely the proposals concerning:

- guidelines for agencies working in the field of education to promote ESD;
- government commissions for examining the importance of informal and non-formal learning for sustainable development;
- an amendment to the Education Act specifying that education shall promote socially, economically and environmentally sustainable development;
- knowledge of sustainable development as a requirement for obtaining higher education degrees or certificates;
- the review of criteria for science centre grants with the aim to improve the centres´ support of learning for sustainable development; and
- a long-term (national) strategy and action plan for ESD work.

Regarding the Committee's last proposal, which was not realised, we can only conclude that the Government did not take into consideration the need for creating a special proactive coordinating body for the UN Decade of Education for Sustainable Development (2005-2014).

95 SOU 2004:104, pp. 28-9 (in English).

5. Closing Remarks

Several factors can explain why ESD seems to be well developed in Sweden. First of all, there is a long tradition of EE in compulsory and upper-secondary education in the country and the transition of EE to ESD was already under way among teachers when the UN Decade for ESD began. The former government prioritised ESD; for example, it introduced ESD into the national curricula for the school system and into the Higher Education Act. The Swedish education system is based on democratic principles, gender equality and social justice, and ESD embraces these values. Research on ESD has been strengthened immensely during the last decade due to the strategy and support of the Swedish Research Council. Lastly, there are many stakeholders within and outside formal, non-formal and informal education supporting and promoting ESD. Thus, one could say that ESD is anchored deeply in the education system and within research, and this could be the reason why ESD seems to be strong, or even stronger, despite the fact that education policy has changed since 2006/2007 and new issues have been prioritised. For example, when the process of creating new syllabi for compulsory school was started in 2009, the concepts of ESD and sustainable development were not on the agenda – but because of the intensive and stubborn argumentation of syllabi writers, ESD was included in the syllabi after all.[96] The result was that ESD was even reinforced compared to earlier syllabi. Even more important: since national testing is based on the syllabi, ESD will be featured in the tests. Another important contribution, in support of ESD, was the expert opinion made by the Swedish National Commission for UNESCO (Svenska Unescorådet) to the Government concerning reform of upper-secondary education.[97]

Also, the Swedish National Agency for Education has recently noticed that the national Sustainable School Award is generating more and more interest (an increase of about 45 % in 2011) despite the fact that funding for this award, and thereby direct financial support to pre-schools, schools and teachers, has declined drastically.[98]

Also, it is very important to note that the Government continues to support the idea that higher education should promote sustainable development.

One of the major weaknesses at the moment, witnessed by many teacher educators, is the problem of systematically including ESD in teacher education. In order to ensure that new teachers will be capable of teaching about the multi-dimensional character of sustainable development issues, they need not only to learn about sustainable issues within a specific discipline, they also need to develop an understanding of the inter-disciplinary character of these issues. Moreover, teacher trainees need to learn the basic teaching methods unique to ESD and to learn how to

96 Interview with Lena Molin, Uppsala University.

97 Svenska Unescorådet (Swedish National Commission for UNESCO), 2008.

98 Information provided by Per-Olov Ottosson, the National Agency for Education.

evaluate, prioritise and decide on local and global sustainable development issues. In order to make this possible, teacher training needs to develop a relevant and effective educational structure where ESD is one central pivot. The Swedish National Commission for UNESCO has recognised this problem in its expert opinion on the Swedish Government Official Report on reforming teacher training. The Commission pointed out the important role of teachers in achieving a sustainable society and highlighted the need for knowledge and skills in all disciplines, not only in science, in order to be able to handle complex sustainability issues in Sweden and globally.[99]

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Another weakness is that there is no specific in-service training for teachers and supervisors on ESD. As the Government has made the biggest effort in decades to improve in-service teacher training, it is very important that some of these resources are allocated to ESD training. There have been some serious attempts at Gothenburg, and other universities, to start such training courses, but since they have an inter-disciplinary character, they do not correspond to the Government's teacher training plans that focus on subject training courses. The demand for in-service training in ESD is huge, as can be seen from the large participation in activities organized, for example, by the Global School and WWF.

ESD in Sweden can provide a good example of how important the interplay between top-down and bottom-up processes can be for developing effective ESD. Both are needed in order to make progress. The commitment of teachers, teacher trainers, researchers and stakeholders has been crucial for the success of ESD in Sweden, but without the support of a strong policy, this success would not have been possible. Today, there is a need for policy makers to make a greater contribution to ESD. The Government is pushing hard to support values such as gender equality and democracy, and the Prime Minister and the Ministry of Environment are heavily committed to the issue of climate change. Thus, there are good opportunities for strengthening the educational policy on ESD in the future; however, the most important step may be to align environmental protection policy and sustainable development policy with educational policy: if the force of the present educational policy (e.g. the great effort made to improve in-service teacher training) could be

99 Svenska Unescorådet (Swedish National Commission for UNESCO), 2009.

merged with environmental protection policy and sustainable development policy, a strong synergy effect could be created. A strong commitment has already been established at grassroots level: among teachers, teacher educators and researchers – they are working hard to implement the goals of ESD.

VIET NAM

Do Van Nguyet and Jesse DeMaria-Kinney

1. Introduction

Viet Nam´s history of environmental sustainability has been based on cultural values, principles and indigenous practices in harmony with nature. These practices have developed in diverse geophysical and climatic environments over millennia. The skills and knowledge acquired, and continuously refined, have been passed down from generation to generation, in peacetime and war, for centuries. This knowledge transfer has not been termed Education for Sustainable Development (ESD), nonetheless, it may be fair to say that ESD is not new to Viet Nam.

ESD and the UN Decade of ESD (DESD) present a concept with a comprehensive vision for the role and scope of educational needs for the challenges of the 21st century. This holistic vision of teaching and learning challenges existing conventional pedagogical models and educational content to place learners' own human development in their own hands. In Viet Nam, the government is committed and the civil society and grassroots organizations strive to empower communities through ESD.

2. Background

To understand the policy dimensions of ESD in Viet Nam, we must begin with a brief overview of the governance structures and education policy as well as the emergence of sustainability on the political agenda.

First, in today's ESD panorama, it is important to recognise that the Communist Party of Viet Nam and the state administrative apparatus, the Government of Viet Nam (GoV), maintain parallel structures at central, provincial, city, district and communal levels. These structures, reaching from the highest levels of state down to grassroots participation, are top-down oriented bureaucracies with highly centralised decision-making powers. The policy implications for this dual structure, therefore, require acceptance at the highest levels of Government as well as the Party. On the one hand, once strategies or policies are approved and the Party issues directives, the opportunity and scope for change are immense. On the other hand, challenges exist for promoting bottom-up implementation as well as civic participation and leadership in local sustainable development agendas.

In 1986, the Government of Viet Nam embarked on a comprehensive reform process – *Doi Moi* – shifting toward a Socialist-based market economy, which was promptly accompanied by political and social change. *Doi Moi* marked a new era for national development and facilitated Viet Nam's integration into the global community. This integration has been primarily due to remarkable economic growth and socio-economic development over the last few decades. The

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Children learn through teamwork and games

achievements have included a poverty reduction from an estimated 58% in 1993 to less than 12% in 2009. However, modernised technologies, as well as market-based consumer oriented production models, have replaced traditional, sustainable practices for resource use and depletion throughout the process.

In recognition of the importance of sustainable development, and in consonance with the Rio Declaration on Environment and Development (1992), the Johannesburg Declaration on Sustainable Development and the Plan of Implementation (2002), the Government of Viet Nam promulgated the "Strategic Orientation for Sustainable Development in Viet Nam" (Viet Nam Agenda 21) in 2004. This national framework strategy on sustainable development identifies the enhancement of education quality, public awareness and professionalism as a priority area of national sustainable development efforts. The Viet Nam Agenda 21 marked a major political commitment to sustainability that explicitly included education as an integral aspect of the Strategy.

Shortly thereafter, in 2005, the GoV established the National Council on Sustainable Development (NCSD) in order to assist political leaders with the complexities of guiding the country down the path towards sustainability. The intention of creating a high-level, multi-sectoral communication and implementation channel[100] proved more difficult than expected, thereby prompting the restructuring of the Council in 2009.[101] This restructuring has provided an excellent opportunity to promote ESD nationally, as will be explained in the ensuing sections.

The history of education in Viet Nam is arguably as extensive as the linguistic and cultural diversity of the country, with the first national university in Viet Nam being constructed in 1070. The Vietnamese education system has undergone numerous education reforms during the last century[102] in efforts to keep pace with the country's integration into the international community. The most recent reform promulgated the National Education Law[103] which states that the principles of educational activities shall be "learning coupled with practice, education linked to production, theories connected to practicability, and education at school combined with education in the family and in the society".[104] The overarching law addresses an array of education content, such as, *inter alia*, promotion of ethnic minorities, creative thinking, civic consciousness and the involvement of family and society in educational processes, all of which are coherent with ESD principles although not termed as such. However, conventional, out-dated teaching practices are still commonly used and are based on rote learning which hinders students' active participation and discourages independent thinking and creativity.[105] To address

100 The National Council on Sustainable Development, constituted by Decision No. 1032/QD-TTg 2005.

101 Decision no. 248/QD-TTg dated 2/24/2009.

102 Official education reform took place in 1945, 1950, 1956, 1980.

103 Resolution of the 11th National Assembly of the Republic of Viet Nam.

104 National Assembly, 2005, p. 3.

105 Viet Nam – Belgium Education Project report.

these issues, many efforts have been made to promote active teaching and learning methods; to move from a predominantly teacher-centred methodology to a more learner-centred methodology, where teachers become facilitators of learning and students take up a more active and independent role in the learning process.

The development of a new Education Strategy, up to 2020, is currently underway, thereby providing a window of opportunity to integrate ESD into the formal education system. Viet Nam's education reforms have increasingly aligned national curricula with the vision and goals of sustainable development. However, not until after the Bonn Declaration (2009) did ESD explicitly enter into formal education policy.

Methodology

The Viet Nam case study was conducted over four months, from August to November 2011, by a consulting team comprising one national and one international expert. The primary research methodologies included a desk review and field visits with informational interviews based in Ha Noi.

The desk review focused on national education frameworks and literature on ESD policy, practices and projects at national and local levels. The research explored existing information and resources available in both Vietnamese and English from Government, international organizations and civil society.

3. National Review

In response to the DESD, and to coordinate the efforts of diverse actors and stakeholders, the Prime Minister established the National Council of Sustainable Development (NCSD) in 2005, under the Chair of the Deputy Prime Minister. Shortly thereafter, the high-level National DESD Committee was established.[106] This committee was composed of government leaders and ministers, particularly noting the Viet Nam National Commission for UNESCO, placed under the Ministry of Foreign Affairs, and the Ministry of Education and Training (MOET) with its affiliated institutions. The Viet Nam National Commission for UNESCO (NatCom) was designated as the Secretariat. However, the promotion of ESD slowed after this initial push in 2005 despite establishment of organizational structures.

During the first half of the DESD (2005-2009), the Ha Noi National University of Education, with support from NatCom and the UNESCO Office in Viet Nam, played an important role in the promotion of ESD in academia and education universities through the Centre for Research and Promotion of ESD (CEREPROD) and the Centre

106 The Viet Nam National DESD Committee was established in 2005.

for Environment Research and Education (CERE). However, few other institutions embraced ESD and the partnerships required to promote ESD at a national scale never materialised.

The Post-Bonn Phase

The mid-Decade "UNESCO World Conference on Education for Sustainable Development" held in Bonn, Germany, in 2009, clearly achieved one of its objectives in Viet Nam by reinvigorating ESD policy efforts. The renewed political will toward the promotion and implementation of the DESD has since shown results in initiatives carried out by several central government institutions and diverse national fora.

One principal product of the post-Bonn ESD push was the *National Action Plan on Education for Sustainable Development in Viet Nam 2010-2014*. This strategic guideline was based on an ESD mapping report which provided an understanding of existing ESD-oriented policies as well as the education sector's needs.

The Action Plan's overall goal was to promote education as the foundation for a more sustainable society whilst integrating elements of sustainable development into the education system at all levels. Perhaps most importantly, the Action Plan calls on ministries, national unions, business associations and civil society to work together as one towards the integration of ESD and implementation of the DESD.

With regard to the wider education agenda, the post-Bonn Action Plan aims to enhance the skills, knowledge and tools necessary to promote active teaching and learning methodologies, a national curriculum review and development, teacher education and professional development, as well as promoting ESD thematic areas such as climate change education and education in emergencies.

The MOET has successfully mainstreamed environmental education (EE) in formal education curricula. This success story favours ESD principles; however, the achievement is seen strictly as concerning environmental education and is not seen as part of the greater approach of ESD. This same "distance" from ESD has been maintained in new climate change education initiatives, which are considered to be "CCE" and not "ESD". A recently approved action plan on climate change

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Learning with child-centred teaching methodology

in the education sector includes reference to ESD, but neither extends to the DESD nor the greater scope of ESD.

On the other end of the spectrum, diverse activities have been carried out by civil society organizations (CSOs) which, though not necessarily representing formal policy or government endorsed, have exhibited great understanding of ESD principles. The greater part of these ESD initiatives have been led by volunteer-based youth groups and have demonstrated promise and commitment to sustainability by Viet Nam's youth.

Does a capitalised "Education for Sustainable Development - ESD" hold the same meaning as education for sustainable development? How important are acronyms and titles?

If we step back to take a wider look, ESD principles are clearly present in Vietnamese education policies and practices, however the term ESD has not formed part of the educational panorama. Moreover, not all stakeholders and change agents use ESD terminology as defined by the DESD. In fact, many activities and policies are not considered ESD although ESD principles clearly permeate the activities designed and implemented by civil society organizations (CSOs) and many GoV policies and programmes. Examples of this (and pillars of national education) include the National Education for All Action Plan 2003-2015, Environmental Education, Building Friendly Schools and Active Students, Building A Learning Society.

UNESCO Support to the Decade in Viet Nam

With the support and cooperation of the UNESCO Office in Viet Nam, the National DESD Committee organized the ESD Forum for coordination, advocacy, analysis and advice on ESD policies and programmes. ESD Forum members proceed from a number of government agencies, research and education institutions, universities, non-governmental organizations (NGOs) and the private sector. This national multi-stakeholder mechanism serves as an advocate for sustainable development through formal and non-formal education at different levels by sharing ESD initiatives and experiences. Moreover, the ESD forum aims to provide an easily accessible communication channel for information on ESD materials, events and strategies at national, provincial and local levels. Comparatively, the National DESD Committee provides a high-level forum for coordination and communication within government policy-making circles.

In the education sector, ESD principles have been embedded in several strategies and action plans, such as: National Education for All 2003-2015, Environmental Education, Building Friendly Schools and Active Students, Building a Learning Society. The way forward for education during the EFA period 2003-2015 is inspired by a vision, which is enshrined in two programmatic statements: "*Education is the*

foundation for social development, and rapid and sustainable economic growth"[107] and "*It is necessary to create radical and overall changes in education*".[108]

Together with MOET, different ministries are working to promote education and awareness-raising, most notably on themes of climate change, disaster risk management, health/HIV, water and sanitation, and cultural diversity. Education and communication programmes are represented in these efforts and play an important part in each national target programme and action plan.

The challenges for ESD implementation are to coordinate, monitor and evaluate the commitments and actions among different ministries and stakeholders toward comprehensive sustainable changes.

Coordination among Civil Society Groups

Opportunities also exist for civil society coordination through the working groups in the NGO Centre in Ha Noi. Once more, although no ESD working group exists per se, educational objectives clearly present opportunities to promote ESD. Education and capacity development play an important part in numerous thematic working groups, such as the working groups dedicated to climate change, capacity building, children's rights, sustainable agriculture and natural resource management, water supply, and sanitation and hygiene. More concretely, the Awareness and Behaviour Change sub-group of the Climate Change Working Group "seeks to raise awareness about climate change throughout Vietnamese society, as well as within organizations…", and dedicates one of its four objectives to education: "To promote improved coordination between educational institutions and teachers, and develop materials targeted at the wider community".[109] This inclusion of ESD content and shared goals in thematic group objectives is repeated through many of the 17 active working groups.

Partnerships

Partnerships are key to all development sectors and walks of life; ESD is no different. Government structures, which have traditionally maintained strict divisions among ministries and compartmentalisation, or silo approaches, to programmes, are now beginning to open up to international partners. But more important are the increased communications among GoV structures themselves. The reformed NCSD,

107 Education Development Strategic Plan 2001-2010.

108 10-year Socio-Economic Development Strategy 2001-2010.

109 NGO Centre: http://www.ngocentre.org.vn/content/thematic-group-climate-change-awareness-and-behaviour-change.

in conjunction with the One UN Initiative in Viet Nam,[110] have played a role in enhancing intra-governmental communications and partnerships while creating new partnership opportunities for non-governmental actors, including the private sector. As the economy continues to grow, Public Private Partnerships (PPPs) are starting to appear and Corporate Social Responsibility (CSR) initiatives are slowly moving into the picture. Should this tendency continue to grow, with increased responsibility and awareness, ESD will be able to count on numerous new change agents.

Monitoring and Evaluation

Tracking progress of achievements, and shortcomings, requires sound monitoring and evaluation mechanisms. Currently, these mechanisms remain limited to project-based mechanisms and indicators. The specific tools and "ESD indicators", as proposed in the UNESCO Strategy for the Second Half of the United Nations Decade of Education for Sustainable Development, although present in some project documents, are less developed than basic monitoring and evaluation mechanisms.

National ESD Activities

Since the beginning of the DESD, a wide and diverse range of ESD programmes and initiatives have been initiated in both the formal and informal education sectors. This section reviews key areas in government initiatives, cooperation and partnerships in ESD; ESD practices in formal and informal sectors; and ESD across other stakeholder groups and thematic approaches to ESD.

Government Initiatives, Cooperation and Partnerships in ESD

This sub-section presents the government activities that have assisted in the integration of ESD policies, programmes and initiatives at the national level, many of which have been carried out in close cooperation with United Nations agencies. Since its establishment, the National DESD Committee has implemented some concrete plans addressing a variety of issues, including:

- Integrating contents on ESD into other educational programmes, such as Education for All; Non-formal Education and Socialisation of Education;
- Improving the quality of education;
- Education infrastructure;

110 Viet Nam is one of eight pilot countries for UN reform, more commonly known as "Delivery as One". The "One UN Initiative" in Viet Nam has worked with the GoV since 2006 to harmonise practices and increase aid efficiency in order to meet the needs of the rapidly changing society.

- Quality of teaching and learning;
- Equal opportunities and access of all women, men, boys and girls to quality education;
- Raising awareness on the role of ESD;
- Reorienting current curricula towards sustainable development by inclusion of ESD contents, such as values education, environmental education, gender issues, HIV and AIDS, poverty elimination, etc.; and
- Training teachers, educators, facilitators.

In the first half of DESD, government initiatives through NatCom and the ESD forum's activities focused on network development, research, awareness-raising on ESD and capacity building for ESD stakeholders.

ESD in Formal Education, from Early Education to Higher Education

Viet Nam´s formal education system includes primary and secondary schools, technical and vocational education and training (TVET) and higher education. The following projects and programmes are examples of ESD principles that have been integrated into formal education.

National Campaign "Friendly Schools and Active Students"

In order to promote and increase the effectiveness of comprehensive education for students, MOET launched the national "Friendly Schools and Active Students" campaign for 2008-2013.[111] The objectives of the campaign are to build a safe, friendly and effective education environment suitable for local conditions and which meets social needs; and to promote the pro-activeness and creativity of students in learning and in public activities in an effective and appropriate manner. A child-friendly school not only provides children with quality education, but also

© UNESCO/Save the Children in Viet Nam
Play on disaster awareness

111 Directive 40/2008/CT-BGDĐT.

with an environment that is fun, healthy and attractive – a place where they can play, be protected from harm, express their views and actively participate in the learning process.

The campaign focuses on five components: (1) building clean, green, safe and attractive schools; (2) organizing effective learning activities, relevant to students' age in each locality, making them feel confident in learning; (3) teaching life skills (such as coping with different life situations, teamwork, maintaining good health, preventing traffic accidents, drowning and other injuries), and skills needed to have good conduct, to live in harmony, prevent violence and social problems; (4) organizing enjoyable and healthy community activities for students; and (5) students' participation in studying, caring and promoting the value of historical, cultural and revolutionary heritage in their localities.

According to Professor Hoang Xuan Han of the National University in Ha Noi: "To make students love their school, educators and administrators should make them feel more interested in going to class. Most students currently feel great pressure from the heavy curriculum and too many exercises. Teachers need to reduce study loads while improving their behaviour, allowing them to become trusted friends of their students and making the student look forward to going to school." (http://english.vietnamnet.vn/education/2 1)

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Some project activities have included developing manuals and monitoring and evaluation guideline materials, and training teachers to implement the campaign. For example, this training aims to improve skills and know-how of subject matter and active teaching/learning techniques, access to teaching materials and resources, and to provide regular opportunities for teachers to meet with their peers and supervisors to discuss pedagogical challenges and solutions. The contents of the "Friendly Schools and Active Students" campaign have been integrated into the 2008 summer training programme for all principals of secondary schools nationwide. In many provinces, schools have organized extra-curricular activities and integrated basic life skills, such as: communication skills, good behaviour and code of conduct, self-study method, traditional songs, team dances, folk games, etc. Many schools have developed good behaviour and conduct codes and guided students to behave politely in the family and the community, and follow transportation laws, etc.

Curriculum Review from ESD Perspectives

Viet Nam has initiated a curriculum review from ESD perspectives to support the integration of ESD into the curriculum at primary and lower secondary levels. The Viet Nam National Institute for Educational Science (VNIES) and MOET are reviewing the current curriculum and are preparing the development of a new national curriculum beyond 2015. To do so, an "ESD lens" was developed as a curriculum review tool and hands-on workshop training was organized for 110 curriculum and subject experts. The ESD lens and training have provided VNIES' general curriculum developers with an overall picture of major global issues, as well as an orientation for how to integrate ESD elements into the future general curriculum.

Viet Nam has initiated a curriculum review from ESD perspectives to support the integration of ESD into the curriculum at primary and lower secondary levels.

Orientation for Education Managers on ESD

The National Institute for Education Management (NIEM), with support from the UNESCO Office in Viet Nam, has implemented "Orientation Workshops for Senior Education Managers" to strengthen awareness and advocacy for integrating ESD into education policies and programmes at national and provincial levels.

Senior managers from 38 provincial departments of education and training, and 11 trainers from NIEM took part in the workshops. They helped to raise the awareness of ESD among educational managers at the central and provincial levels. NIEM is now revising its annual training programmes for education managers and administrators, and ESD will become one of the new topics. However, they require official guidelines from MOET before they can start ESD implementation in their schools.

Adapting UNESCO's Teaching and Learning for a Sustainable Future (TLSF) Tool for Teacher Training

Well-trained and motivated teachers are key change agents for promoting sustainable values and lifestyles. To integrate ESD into teacher training, the Department of Teachers and Educational Administrators (DTEA) of the MOET and the UNESCO Office in Viet Nam have translated and adapted UNESCO's *Teaching and Learning for a Sustainable Future* (TLSF) tool. The TLSF offers educational materials and a professional development programme for teachers in Vietnamese that includes teaching and learning strategies and interdisciplinary curriculum themes. Training workshops were conducted for over 60 teachers from different fields and levels and education managers in five provinces. Two NGOs (VVOB and Live & Learn)

collaborated on this programme and are sharing the teaching and learning materials to build capacities for education universities and colleges on ESD. As a result, the MOET has formally adopted the TLSF as official teacher training resource.

The Viet Nam-Belgium Teacher Training Project

The Viet Nam-Belgium Teacher Training Project focuses on improved education management, teachers' professional development, curriculum renovation and introduction of modern teaching and learning methodologies. The project aims at improving the quality of teacher training at primary and lower secondary level in 14 mountainous provinces. In addition to overcoming constraints in teaching and learning techniques, another major challenge is ensuring equity in access to equal quality education, as ethnic minority children and their teachers face many cultural, linguistic and socio-economic barriers.[112] A number of results have been achieved through the project, including:

As a result of adapting UNESCO's Teaching and Learning for a Sustainable Future (TLSF) tool, the MOET has formally adopted the TLSF as an official teacher training resource.

- 800 key teacher-trainers and teachers were trained as trainer on the use of innovative methodologies.
- Key teachers and curriculum developers of 56 schools received training and designed new lessons based on the students' needs, adapting the lessons to the historic, geographic and cultural context of the 14 provinces.
- Training of Trainers for Classroom Action Research was delivered to 2,500 teachers in the 14 provinces.
- Resource and documentation centres in 14 teacher training institutes have been provided with computerised equipment, teaching aids, books, reference material and furniture, allowing teachers and students to better prepare for their lessons and improve their teaching and learning practices.
- Through a participatory process, Child-Friendly School Libraries (CFSLs) were developed by 42 schools in the 14 provinces to strengthen the application of active teaching and learning in the primary, lower secondary and secondary boarding schools.
- MOET used all project materials for regular national teacher training during the school year 2010-2011.

112 Viet Nam – Belgium Education Project report.

VVOB Supports Teacher Training to Enhance Active Teaching and Learning Methods

The Flemish Association for Development Cooperation and Technical Assistance (VVOB) assists pre- and in-service teacher training institutes in the five provinces[113] of North and Central Viet Nam by providing integrated support to active teaching and learning (ATL) change processes. These help trainees to acquire the competencies needed to become learner-centred teachers and to develop didactic materials that facilitate ATL. Innovative approaches and teaching methodologies, as well as integrating and building on achievements and best practices in EE and information and communication technologies (ICT), are becoming the focus of the teacher-training programmes for the short and medium term.

Promoting Child-Centred Methodology

Oxfam and other international NGOs have promoted active child-centred methodology (CCM). Oxfam provides training on CCM and teaching methods to groups of core teachers who then train other teachers in their schools. Oxfam also provides training on teaching Vietnamese as a second language for ethnic minority children, children's rights and creating friendly school environments. Currently, Oxfam works with partners to ensure that 11,000 children in provinces have equal access to good quality basic education and are able to improve their learning outcomes. Through information, education and communications (IEC), the Oxfam education project aims to influence the attitudes of ethnic minority communities about the value of schooling, especially for girls. The success of the programme contributed to the MOET interest in adopting and promoting the methodology nationwide.

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ESD in Non-Formal and Informal Education

In Viet Nam, there are diverse non-formal and informal education activities which aim to incite different target audiences to learn about sustainable development, acquire skills and take action in various fields, ranging from children's rights to HIV and AIDS and environmental protection. These activities are promoted by both government initiatives and civil society organizations (CSOs).

113 Thai Nguyen, Quang Ninh, Nghe An, Quang Nam, and Quang Ngai provinces.

According to the strategy "Building a learning society in the period 2005-2010",[114] one of the goals is to "create good opportunities and favourable conditions for everybody at every stage of life and at whatever level to pursue learning constantly, continually and throughout his/her life at any time, any place and any grade of study; mobilizing the integrated strength of the whole society in building up and promoting education; all people, every organization sharing the responsibility and the duty of studying and actively participating in building up a learning society." Providing continued learning possibilities for all citizens is thus an important factor for the sustainable development of society.

Community Learning Centres (CLCs)

The community learning centre (CLC) model used in Viet Nam is based on the UNESCO model, the KOMINKAN model of Japan and, especially, on the experiences of cultural and educational regimes of Viet Nam in the past (for example, the village and communal house model). The overarching aim of the CLCs in Viet Nam is to empower individuals and promote community development through life-long learning opportunities for all people in the community and, particularly, for out-of-school youth and adults.

In an effort to respond to learning needs of local communities, resource materials on sustainable development (REMASD) were designed for nation-wide use in CLCs by the Viet Nam National Institute for Educational Science (VNIES), and with the technical and financial support of the UNESCO Office in Viet Nam. The main users of REMASD are CLC facilitators, for whom REMASD are reference learning materials that can be used to develop relevant local learning materials and organize teaching and learning activities in CLCs.

Conservation Education Programmes in Protected Areas in Viet Nam

Since the late 1990s, diverse environmental protection and conservation education activities in terrestrial and marine protected areas have been developed across Viet Nam. Target groups for these activities include students and local people, tourists as well as government officers.

Many local and international NGOs support education programmes delivered with hands-on or experiential learning. For example, local students can participate in curricular activities where they will share their understanding and appreciation of nature and, at the same time, explore issues and solutions inside the classroom for the past, present and future of their local natural resources. Or they can join conservation or nature clubs with extra-curricular after school activities (experiments, simulations, debates, games, etc.).

114 Decision No. 112/2005/QĐ-TTg.

Community-Based Groups and Local Voluntary Networks to Deliver Information, Education and Communication (Iec) on Disaster Risk Reduction

In a number of disaster-prone provinces, Oxfam has worked with local partners to build effective voluntary networks and information, education and communication (IEC) clubs on disaster management. Each community network consists of 10 to 15 members, who are nominated by local people. They receive training in communications and presentation skills and discuss their communication plans. At village/hamlet level, the voluntary members usually visit disaster-prone households to provide information on food safety, seed preservation and preventive measures.[115]

Thematic Approaches to ESD

Climate Change and Disaster Risk

One of the most important and emerging areas for ESD in Viet Nam is climate change. Viet Nam is giving priority to raising awareness and education on climate change and natural disasters due to the country's large number of vulnerable populations. Government agencies, in close partnership with UN agencies and CSOs, are thus strongly committed to climate change and disaster education for sustainable development.

In 2010, MOET approved the *Action Plan for Response to Climate Change of the Education Sector for the period of 2011-2015*. The specific objectives of the action plan are: (1) to raise awareness of different stakeholders in the education sector of climate change and response to climate change; (2) to strengthen capacity and skills and address the attitudes and behaviour of educational managers, teachers, researchers and students with regard to climate change and their response to climate change on a global, regional and national level; and (3) to integrate climate change contents into the curriculum at different learning levels. In 2011, MOET approved the *Action Plan of the Education Sector for prevention and mitigation of natural disasters in 2011-2015*.

The *Minimum Standards for Education Preparedness, Response and Recovery*, a global tool that defines minimum standards of educational quality and access to education in emergencies, through to recovery, have been translated and adapted for the Vietnamese context through a participatory process involving national and international support and stakeholders.

Several workshops held in Viet Nam in 2010 and 2011 have facilitated the sharing of experiences and co-operation of UN agencies, the Vietnamese government and

115 DIPECHO- DANI, 2007. Community based disaster risk management: Good practices.

NGOs on climate change and disaster education. On the local level, good climate change practices and disaster education for sustainable development include:

- The children's development organisation Plan in Viet Nam supported students to produce a film about climate change and is using this film to raise awareness on climate change in schools and communities. Students shared solutions for reducing the impact of disasters before, during and after the event.

- The NGO Save the Children has established and supported student clubs and schools to implement disaster risk reduction education in northern mountainous provinces, central Viet Nam and the Mekong River Delta, in cooperation with MOET and UNICEF. In the project area, children and the community are involved in planning, implementing and monitoring activities such as capacity building for communities, media campaigns, maintaining equipment and disaster-safe construction. They speak directly with adults about their needs and concerns during emergencies.

- Highlighting the role of young people in the face of climate change, the NGO Live & Learn has worked with them to build a Green Generation Network in Viet Nam. The Network, which started in three cities, has now spread to over 20 cities and provinces. It counts on the involvement of more than 50 environmental and volunteer clubs, whose members play an active role in bringing about 'green' change; for example, by conducting awareness-action-advocacy campaigns on climate change.

- The NGO VVOB has implemented training in environmental education for "master trainers", who then provide training to other teachers, who in turn deliver these lessons to students in upper secondary school. The training is focused on climate change, energy efficiency, waste and recycling, and also equips participants with basic knowledge and skills to integrate these topics into teaching and learning.

- The NGO 'Action for the City' has promoted activities to change the behaviour of communities and students in urban areas with regard to water and electricity consumption and reducing waste at home and at school. Communities and students work in small groups to develop creative environmental solutions for their own community issues.

- In partnership with the MOET, the NGOs Live & Learn and Plan Viet Nam have developed an education package for climate change education. This resource integrates an understanding of climate change concepts into schools through innovative participatory teaching and learning methods. This exemplary joint-effort promotes climate change education and behaviour change that combines the efforts of both government and non-governmental organisations.

Environmental Education

The policy and action plan for 2001-2010 of the MOET aimed "to incorporate environment into the national education system in Viet Nam". After 10 years of implementation, results achieved include:

(1) The development of programmes, curricula and teaching material on environmental protection at all educational levels; environmental issues have been integrated into curricula from pre-school to university and post graduate education.

(2) Teacher training on environmental issues for over 51,800 teachers from pre-school to upper secondary schools and 6,000 teachers from CLCs, further education, colleges and universities.

(3) Training and more support for scientists and officials working in the field of environment.

(4) Enhancement of facilities for training and research on environment.

(5) Increase in information on environmental education. For the period 2011-2015, many activities of the previous action plan need to be further promoted: teacher training, development of learning materials and environmental information systems, teaching and learning equipment, and Green-Clean-Nice models of schools to be identified and replicated.

HIV and AIDS Education

The BBC World Service Trust recently recognised the education sector's response to HIV and AIDS in Viet Nam as an example of global best practice in the coordination of HIV and AIDS efforts. The Education Sub-group, under the Joint United Nations Team on HIV and AIDS (made up of UNICEF, the UN Population Fund and UNESCO), supported MOET's efforts to establish and strengthen its Inter-Departmental Committee on HIV and AIDS (ICHA), formulate a Strategic Plan on HIV for 2011-2015 and integrate sexuality education into the National Education Strategy for 2011-2020. Moreover, the initiative supported the development and institutionalisation of a curriculum[116] that integrates reproductive health and HIV and AIDS into core lessons and extra-curricular activities for secondary schools. It also includes special training for parents so that they can better discuss sensitive HIV and AIDS and reproductive health issues with their children.[117]

116 http://www.un.org.vn/en/what-we-do-mainmenu-203/the-un-making-a-difference/1388-helping-vietnamese-youth-protect-themselves-from-hiv.html

117 EDUCAIDS country snapshot: Viet Nam; 2011. Viet Nam: A model of successful UN family collaboration to support a comprehensive education sector response to HIV and AIDS.

Multi-sectoral organisations, at all levels, have implemented information, education and communications (IEC) and behaviour change communication activities on HIV and AIDS throughout Viet Nam, including training, peer education among key populations at higher risk, counselling, establishing hotlines and running competitions, 'edutainment' shows, stories and photo exhibitions.

Life Skills

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Since 2009, UNICEF Viet Nam has supported the MOET to integrate life skills into the basic education curriculum at primary, lower secondary and upper secondary level, as part of the Government's national campaign 'Building Friendly Schools and Active Students'. A number of subjects were selected to integrate life skills, including Vietnamese, science, ethics education for primary education and geography, biology, literature, civic education at lower and upper secondary education. VNIES then developed a teachers' guide, comprised of lesson plans for these subjects. During the period from March to May 2010, MOET initiated a pilot integration scheme at school level in two provinces and conducted monitoring to collect feedback for revision of the material. MOET endorsed the teachers' guide and is rolling out life skills education nationwide since the beginning of the academic year 2010-2011.

ESD for Other Stakeholder Groups (Young People, Media, Public Awareness)

ESD and Young People – Building a Green Generation

In Viet Nam, children and young people under 30 comprise 60% of the population, with people aged between 15 and 24 accounting for a quarter of the population.[118] Vietnamese youth are increasingly equipped with global information and technology, foreign languages and modern knowledge. In recent years, there have been growing numbers of Vietnamese young people starting groups, mobilising volunteers and implementing activities related to climate change, poverty reduction, children's rights, among others, in both rural and urban areas. Some groups are

118 United Nations, 2010. *World Youth Report 2010: Youth and Climate Change*. United Nations, New York.

school-based clubs from higher education and senior secondary schools, while others are independent, self-organized volunteer clubs outside school settings. They organize activities and attract volunteers with programmes and events, ranging from awareness-raising to sustainable development actions, such as: translating and disseminating environmental and climate change materials, learning English while talking about green topics, signing a petition for environment protection, creating community art, encouraging recycling, cleaning up lakes, promoting vegetarian food, recycling festivals, etc.

Through building youth clubs and running community and volunteer activities, thousands of young people are committed and play their roles as active citizens who improve the environment and their communities for the present and the future.

A recent Survey on Youth and Sustainable Development was conducted with over 600 young people aged between 15 and 25, in over 28 provinces across Viet Nam. Many interviewees mentioned that they became interested in sustainable development (SD) when participating in social activities, or when studying some subjects related to SD in their school or university programmes, with 67.5% reporting that their interest in SD started within the last three years.

ESD and Media

The Viet Nam Forum of Environmental Journalists (VFEJ) unites journalists who advocate and work in the field of environmental protection, nature conservation and sustainable development. VFEJ has organized training workshops and study tours for journalists on environmental communication and has facilitated exchanges and meetings among journalists and environmental experts.

According to the Youth and SD survey cited previously, the mass media (TV, newspapers and radio) and the Internet are the most common source of information about SD for young people (see figure below).

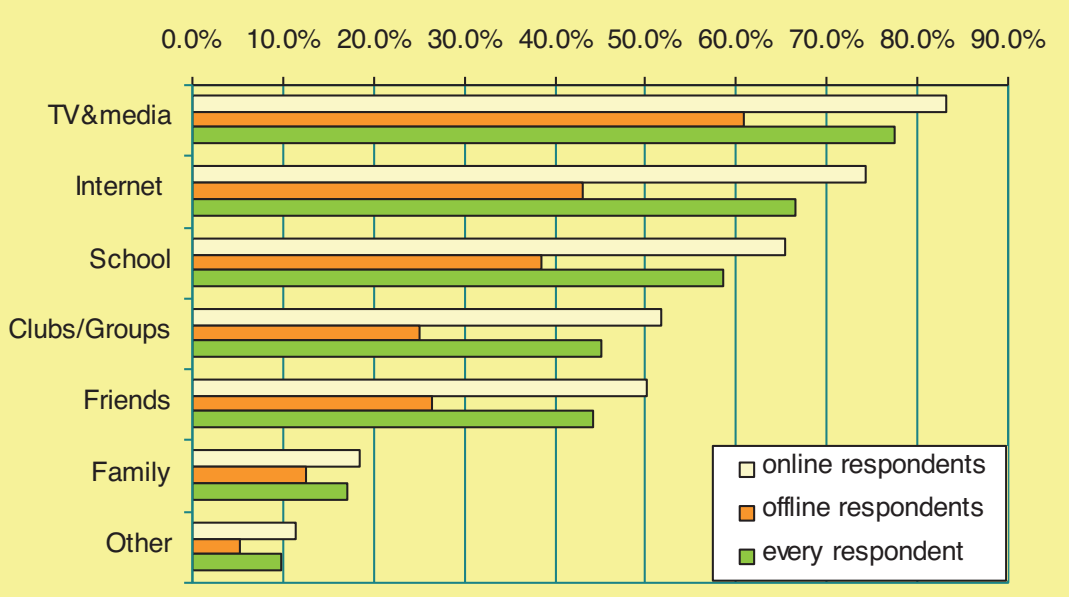

Figure 2: Sources of Information on SD used by Vietnamese youth

There are a growing number of individuals, groups and organizations creatively using social media tools (blogs, websites, Facebook, etc.…) to share information and communicate effectively about sustainable development. Environmental and charity groups use "tag" and "event invitation" on Facebook to attract people to their public events or share clips, pictures and news on sustainable development topics; for example, after four days of sending invitations on Facebook and through online forums of universities, Green Generation attracted over 500 students to the International Clean-up Day in 2011.

ESD and the Business Sector

As the economy of Viet Nam grows, so do the social and community activities organized by international and national companies as part of their corporate social responsibility (CSR). One example is Unilever Viet Nam, which has made great efforts to put into practice its sustainable development targets, through joint initiatives with its customers and consumers, as well as through community-based environmental programmes. These efforts focus on three areas: (1) improving health, hygiene and livelihood; (2) promoting a green environment; and (3) sustainable sourcing in partnership with the relevant Government agencies (i.e. Ministry of Health and Ministry of Education and Training) and the Viet Nam Women's Association. Another example is the Go Green programme of Toyota Motor Viet Nam, which aims to raise public awareness through mass media, as well as support volunteer clubs, environmental education for national park rangers and the promotion of eco-villages. More examples are Bayer Vietnam's annual Bayer Environmental Ambassador awards for young people which rewards their ideas on environmental education; and SGS Viet Nam's cooperation with local NGOs which aims to support young people in their efforts to build awareness and change behaviour in favour of sustainable lifestyles, etc.

In 2007, the Viet Nam Chamber of Commerce and Industry (VCCI) and the United Nations in Viet Nam jointly launched the Global Compact Network Viet Nam (GCNV). The goal of the GCNV is to be the national corporate social responsibility centre of excellence; it seeks to align business operations and strategies everywhere with ten universally accepted principles in the areas of human rights, labour, environment and anti-corruption.

In addition, a key capacity building programme is underway, where four Vietnamese universities[119] collaborate to develop and pilot a corporate social responsibility (CSR) curriculum. This CSR curriculum project will support the development of a responsible management curriculum and training for future managers and business leaders in Viet Nam.[120]

119 Thai Nguyen University, Foreign Trade University, Hanoi School of Business – Viet Nam National University, and the University of Economics, Ho Chi Minh City.

120 http://www.globalcompactvietnam.org/detail.asp?id = 104

In April 2010, the VCCI (Viet Nam Chamber of Commerce and Industry) set up the Viet Nam Business Council for Sustainable Development (VBCSD). In 2011, the council focused on four main tasks: communication and awareness raising, training, research and international cooperation. [121]

Research

Up to now there has been little research, or research funding, specifically devoted to ESD in Viet Nam. Some research institutes (e.g. CEREPROD of Ha Noi National University of Education) have organized workshops to share experiences, produced research reports and facilitated the networking of teachers and universities on ESD. However, there is a lack of systemized information in terms of needs assessment, situational analysis or practical recommendations for the further development of ESD in Viet Nam.

Cooperation and Partnerships for ESD: Coordination and Integration of United Nations ESD Initiatives

The UNESCO Office in Viet Nam has played a fundamental role in supporting the national ESD Focal Point/Ministry of Foreign Affairs/NatCom and MOET, as well as associated institutions, through technical and financial support. This has led to the emergence of the majority of existing ESD policies in Viet Nam. The UNESCO Office's support initially focused on awareness raising and advocacy, including mapping the ESD landscape and, more recently, on technical issues such as curriculum review with an ESD perspective, integration of ESD into education management and production of teacher training materials. In addition, UNESCO's close partnerships with the Government of Viet Nam and civil society has contributed to the establishment of national coordination and communication channels, the National ESD Action Plan 2009-2014 and the MOET Action Plan on Climate Change.

4. Key Observations

Overall, the general obstacles for ESD implementation in Viet Nam have been, and continue to be, a lack of understanding of ESD or the DESD. It is often believed that ESD is a new topic or subject to be taught, which is met with resistance – as are most changes, particularly the unknown. Paradoxically, while Government officials, education administrators and practitioners discard the integration of ESD into policy and/or practice, they clearly embrace and promote educational programmes and activities on sustainable development. This is clear when reviewing the numerous

121 http://www.vccinews.com/news_detail.asp?news_id = 23409

government education policies and programmes which acquiesce to the DESD's objectives and ideals. As evidenced previously, many policies and activities embody ESD principles while they are not deemed ESD.

Of these ESD initiatives reviewed, the National ESD Action Plan of Viet Nam 2010-2014 is the first official strategic government endorsement of the promotion and implementation of the DESD and, in fact, appeals for collaboration to ministries, national unions, business associations and civil society. The Action Plan potentially serves as the base for future policy work, government programmes and grassroots activities.

It is important to note that the progress and achievements of ESD in Viet Nam are not the accomplishment of any one organization, but of collective efforts and teamwork of the Ministry of Education and Training, the Ministry of Foreign Affairs, the National Commission for UNESCO, the UNESCO Office in Viet Nam, along with associated institutions, civil society and the private sector.

Main Findings

A thorough understanding of ESD should allow any policymaker, education practitioner or community member to "add" ESD's values and goals to already existing systems and practices. This integration of principles of social, environmental, cultural and economic sustainability results in an enhanced, not overloaded, educational programme, whether formal, non-formal or informal.

Civil society and NGOs have played active roles in promoting participatory approaches to integrate sustainable development into non-formal educational programmes, with a focus on local citizen participation, community empowerment and the strengthening of disadvantaged people and areas. In many cases, the bottom-up approaches of civil society organizations towards educational and sustainability issues have gradually convinced the local and central government agencies to adopt and replicate these approaches nationwide. Some examples of CSOs and their initiatives are clearly presented in this case study's section on stakeholders and thematic approaches to ESD.

In Viet Nam, information and communication technologies (ICT) have been placed on the education reform agenda both as an object of education and as an important pedagogical tool for innovating teaching methodology. Today ICT are conceptualised as a tool that can effectively support the innovation of teaching, learning and education management, and contribute to improving the efficiency and quality of education. Although underutilised in Viet Nam, and often misused, ICT can offer great opportunities for teaching and learning.

Although not fully represented in this study, participation in workshops has been an integral aspect of ESD's development in Viet Nam. Participation in global (Bonn

conference, 2009), regional (Bangkok conference, 2012) and national workshops and conferences have proved instrumental in both gaining political support while providing practical examples of ESD practices for replication.

Strengths, Weaknesses, Opportunities and Threats

This section identifies some of the key strengths, weaknesses, opportunities and threats to continued and enhanced national ESD efforts in Viet Nam.

Strengths

- A national action plan on ESD has been approved for the time period of 2010-2014. National action plans and strategies for specific issues linked to ESD have also been integrated into the education sector, such as issues concerning HIV and AIDS, climate change, disaster risk reduction, etc.
- Commitment from the highest level of government to ESD, with the National DESD Committee forming part of the state's ultimate authority on sustainable development.
- Government provides specific national frameworks and strategies for ESD education goals.
- ESD initiatives can count on a wide array of stakeholders, from diverse public and private development sectors.
- Teacher education colleges and universities now have ESD multi-media teaching and learning tools in Vietnamese at their disposal.
- The MOET, as well as other central institutions, particularly NIEM and VNIES, clearly support the integration of ESD into educational institutions.
- Strong, well-functioning, established grassroots networks are in place to support local level ESD initiatives.
- The pilot status of Viet Nam as a UN reform country has opened communication channels among UN and other key development agencies.

Weaknesses

- The concept of ESD is new and abstract and its content is dynamic, so it will surely take time for Vietnamese educators to introduce, understand and feel comfortable with ESD.
- ESD encompasses a wide range of multi-disciplinary educational aspects, from pedagogy to thematic areas, which requires excellent coordination and involvement between the education sector and other sectors, among different ministries and departments, local and national agencies, government, business and civil society organizations. Some coordination mechanisms and interaction exist, but they remain weak.

- A common ESD terminology must still be agreed and unified; many activities are in the domain of ESD, but are not called ESD.
- National capacities and awareness of sustainability issues and sustainable development are limited.
- Many education programmes and activities tend to increase knowledge about ESD, but do not yet promote practical ESD skills and actions, or an ESD approach.
- Top-down governance structures are highly bureaucratic and are often slow to react to real needs, causing the Vietnamese education system to be slow to change.
- Teachers and education managers are stressed by constraints, such as heavy and intensive curricula for both teachers and students of different levels. Therefore they often refrain from adopting new practices and/or content.
- Vietnamese educational decision-makers tend to invest more in quantitative aspects, such as school construction and textbook printing, than on quality-oriented processes.
- Lack of meaningful social participation to support life-long learning, linkages of inside and outside school learning, or family-school-community linkages. It is difficult to implement the whole-school approach for ESD.

Opportunities

- The legal basis and mechanisms for implementation of an ESD plan and strategy in Viet Nam have been established and there is a strong commitment at the highest level to DESD.
- The improvement of education quality is strongly supported by government and the general public. There is awareness of the importance of sustainable development and of the major role that education can play in this area.
- ESD can count on strong support and cooperation from national, regional and international organizations and institutions. ESD is of strategic importance for Viet Nam because it is in line with the development process of the country. The GoV thus strongly supports and implements ESD-related activities.
- With the recognition of sustainable development as a priority on the global and national agenda, information and technology is being updated, more policies, training and facilities support ESD, there is greater awareness, and stronger cooperation among education institutions and agencies.

- Sustainable development themes can be integrated into many different school subjects, and several important ESD-related themes are already being learnt and taught (e.g. environment, children's rights, culture, health, etc.)
- The education sector has traditionally been a high priority and has received much attention at all levels of government and from the public. As such, its ability to push for reform provides a positive environment for ESD.
- The ESD Forum can play a prominent role and expand its capacity to become a national network and communication channel for ESD.
- An increased awareness of the adverse effects and impacts of global climate change on Viet Nam's economy and society can foster new private-public partnerships for promoting ESD.
- The current curriculum review provides an exceptional opportunity to integrate ESD into formal education.

Threats

- The weight of national strategies and plans, particularly the next Education Strategy for 2020, could separate ESD from formal education by omitting ESD.
- A continued compartmentalisation (silo approaches) of line ministries could require a continued phase of "awareness-raising" to gain support of individual ministries, despite MOET's recent increased support for ESD.
- The persistent emphasis placed on economic growth and industrialisation may limit the scope of the message on sustainability and sustainable development.
- If the curriculum review is carried out without the integration of ESD, it will likely take years before such an opportunity is presented again.
- Government continues to prefer quantitative measures over qualitative gains.
- The multi-dimensional contents of ESD may cause great difficulties in selecting and integrating them into the existing curricula, as well as into textbooks. This presentiment could lead to the curtailment of the current curriculum review and design initiatives regarding ESD.

5. Closing Remarks

Due to the nature of the political system and governance structures in Viet Nam, the advance of ESD in the education sector, as well as in other development sectors, has been slow to gain momentum. Nevertheless, now in motion, ESD stands poised to progress steadily in formal and non-formal education initiatives. The diversity of stakeholders at distinct levels provides leverage for national policy while maintaining a legitimate, and efficient, implementation capacity at the grassroots level.

Perhaps the greatest impediment to ESD is understanding, and transmitting the insight, that there is no one single correct interpretation and application of ESD. Instead, this is more about increasing the capacities of individuals, communities and societies as a whole so that they can strive towards a more just, equalitarian and sustainable global society. In Viet Nam, the failure to grasp this reality, in combination with inadequate inter- and intra-ministerial communication, are the principal obstacles to fulfilling the DESD. Nevertheless, the values and principles of ESD are seen not only as a shared societal responsibility, but considered to be an excellent opportunity for maintaining and continuing Viet Nam's recent socio-economic gains while guaranteeing healthy ecosystems and environments for future generations.

Conclusions:
Key Observations, Lessons Learnt and Ways Forward

Conclusions: Key Observations, Lessons Learnt and Ways Forward

Education for Sustainable Development (ESD) approaches and initiatives are diverse, and vary all across the world. To be effective, ESD processes must take into account the different sustainable development needs of the region, in addition to particular environmental contexts, cultural diversity and socio-economic, political and educational systems. The five case studies presented here highlight lessons learnt and ways forward for developing ESD in each of the five particular countries. This chapter summarizes key observations and lessons learnt, and indicates possible ways forward emerging from these reports.

Key observations and lessons learnt from the five case studies

Policy Context

Political support from the national government is vital for driving ESD processes. Having an institutional and legal framework and a national strategy to implement ESD are also necessary for an efficient implementation of ESD at the country level.

Examples include:

- Costa Rica – the President and all the ministers signed the 'National Commitment to the Declaration of Education for Sustainable Development' in 2006; however, no coherent ESD policy exists at present.
- Morocco – The National Charter for Environment and Sustainable Development has brought different ministries and stakeholders together in support of a convergent sustainable development strategy.
- South Africa – ESD has been widely integrated into policies with development priorities and ESD-related issues have gone from being marginal to mainstream in broad policy discourses concerning education, environment, economy and science and technology.

- Sweden – ESD issues are included in national curricula and prioritised in the Higher Education Act. Without strong policy support, Swedish success in ESD to date would not have been possible.

- Viet Nam – The Ministry of Education and Training and other central institutions clearly support the integration of ESD into the education system. The National ESD Action Plan of Viet Nam 2010-2014 has been adopted, which is the first official strategic government endorsement of the UN Decade of ESD.

A central coordinating body that can ensure the collaboration of all stakeholders and oversee a coherent ESD strategy is essential for effective ESD implementation.

As the South African case study shows, many examples of ESD innovation have emerged over the years. However, while there is a tremendous amount of work happening on the ground, it is often disconnected from the national space and up-scaling and uptake into national education systems has been inconsistent. The absence of a national ESD strategy and co-ordinating 'body' has hampered co-ordination at national and grass-roots levels. The lack of a national strategy also creates numerous monitoring difficulties, and monitoring frameworks for ESD have not emerged. The Costa Rican case study also mentions that further leadership in ESD is needed to orchestrate the many voices in the country calling for Costa Rica to fulfill its potential as a leader in SD and ESD. In Sweden, the Swedish International Centre of Education for Sustainable Development (SWEDESD) has been established to act as a node in an international network for ESD.

Participatory approaches to ESD are important for fostering ESD. In particular, approaches that include stakeholders ranging from the smallest communities up to the national level have proven to be successful.

The interplay between top-down and bottom-up processes are very important for making ESD flourish. Both are needed to make progress. Sweden is a good example of how important this is. Bringing together teachers, teacher trainers, researchers and various stakeholders has been crucial for the success of ESD in Sweden. In South Africa, high quality educational processes and learning resources that support ESD have led to an innovative research-based orientation for developing change-based ESD practice.

Research

Research, and monitoring and evaluation of ESD, help drive ESD progress on the national level.

- In Costa Rica, the *State of the Nation Programme,* a research programme on sustainable human development, has provided (for the last 18 years) a system of annual monitoring and evaluation of *SHD* in: a) equity and

social integration; b) opportunities, stability, and the state of the economy; c) harmony with nature; and d) strength of the democracy. The programme's report is widely cited by the media and influences decision-makers. Furthermore, the country's four public universities created an inter-university commission in 1994 to promote ESD in higher education, and a group of 16 public and private universities have created the Network of Sustainable Institutions of Higher Education.

- The Moroccan case study highlights the need for increased support to roll-out more academic and research programmes on ESD.
- In South Africa, re-curriculating towards ESD has happened at some levels in higher education (e.g. sustainability programmes at Rhodes University and the University of Cape Town); however more emphasis needs to be given to ESD in undergraduate education degrees and continuous education and training.
- In Sweden, research on ESD was strengthened immensely during the last decade due to the strategy and support of the Swedish Research Council, which has systematically provided state funding for research on ESD.
- In Viet Nam, Ha Noi National University of Education, with support from the National Commission for UNESCO and the UNESCO Office in Viet Nam, has played an important role in the promotion of ESD in academia and education universities through the Centre for Research and Promotion of ESD and the Centre for Environment Research and Education.

Partnership Processes

ESD is a multi-stakeholder endeavour. The extension of ESD to all levels requires collaboration of different stakeholders, including from the non-formal education sector and civil society. Effective bottom-up approaches can encourage governments to upscale and implement them on the national level.

Progress of ESD in Viet Nam is the accomplishment of collective efforts and teamwork by ministries, UNESCO agencies, associated institutions, civil society and the private sector. When ESD policy efforts slowed down at higher government levels after the initial ESD push, NGOs maintained steady ESD implementation momentum at the grassroots and sub-national levels. Civil society and NGOs have also played active roles in promoting participatory approaches to integrate SD into non-formal education programmes, with a focus on local citizen participation, community empowerment and strengthening disadvantaged people and areas. In many cases, bottom-up approaches of civil society organizations for education and sustainability issues have gradually convinced local and central government agencies to adopt and replicate these approaches nationwide.

Also, in South Africa, the large civil society sector has played an important role in accelerating environmental reform and encouraging learning about sustainability issues for individuals and communities. The extensive network of ESD civil society organizations operate at local levels and are essentially coordinated through provincial ESD forums. In Costa Rica as well, a large number of NGOs carry out ESD and EE activities. In Morocco, it is evident that successful ESD needs adequate accompaniment of non-formal education and support from NGOs. This is essential for developing a SD culture in the population.

In Sweden, there is strong commitment to ESD among teachers, teacher educators and researchers at grassroots level, and many ESD stakeholders within and outside the formal, non-formal and informal education system support and promote ESD. ESD is thus anchored deeply in the education system and research, which may be the reason why ESD seems to be strong despite the fact that education policy since 2006/2007 has been prioritising new issues.

Ways Forward

Policy

The importance of further strengthening education policy on ESD

In Sweden, the Government is pushing hard on issues such as gender equity, democracy and climate change. There are good opportunities for strengthening education policy on ESD in the future, especially if environmental protection and sustainable development policies are integrated with education policy. In Morocco, giving greater attention to implementing ESD in rural areas is a chance for moving forward. According to the case study, delaying this could jeopardise the important progress that Morocco has achieved in ESD so far. In Costa Rica, the opportunity and challenge is to develop a broad EE policy relevant to all sectors. In Viet Nam, the National ESD Action Plan can potentially serve as the basis for future policy work, government programmes and grassroots activities for fostering ESD.

Tackling financial issues

Allocating sufficient financial resources to ESD is essential for its successful implementation. This concern has been raised both by the South African and the Moroccan case studies. More funds and international collaboration for the nationwide implementation of an effective SD culture should be requested.

Teaching and Learning Processes

Include more ESD in teacher education to foster the quality of education and ESD

One of the major challenges is systematically including ESD in teacher education and developing an education structure where ESD is a central pivot. In order for teachers to effectively teach ESD, they need to understand the multi-dimensional character of local and global SD and learn the basic methods for teaching ESD, as well as for evaluating, prioritising and deciding on SD issues. This requirement was stressed by the Swedish National Commission for UNESCO in their expert opinion to the Swedish Government on teacher training reforms. Another weakness in Sweden is the lack of specific in-service training for teachers and supervisors on ESD. The demand for this is huge, as can be seen by the attendance of such training activities organised by the Global School and WWF, for example. The Moroccan case study also stresses the need for more ESD in teacher training programmes and curricula, and points to the importance of ESD to foster quality education. The Vietnamese government and general public strongly support efforts to improve the quality of education, and they are aware of the major role that ESD can play in this area.

Monitoring and assessment processes for ESD need to be developed and implemented

The South African case study, in particular, stresses the need for monitoring and assessing ESD learning. While much effort has been put into designing learning opportunities for ESD, and integrating and mainstreaming ESD across sectors and disciplines, more attention needs to be paid now to developing monitoring and assessment processes for ESD learning.

Profiling ESD in workplaces and in vocational training and education is important for developing skills

The South African report also highlights the need to profile ESD in vocational training and education and in workplaces as a means to develop much needed skills for the country. Content, practical skills and workplace experience should increasingly be aligned with workplace sustainability practices.

Explore the potential of ICT and social networking as learning platforms to promote ESD

Today, ICT are seen as tools that can effectively support the innovation of teaching, learning and education management, and contribute to improving the efficiency and quality of education. This includes ESD. The South African case study highlights that social networking and mobile communications should be explored as platforms for ESD learning. In Viet Nam, ICT have been placed on the education reform agenda, both as an object of education and as an important pedagogical tool for

innovating teaching methodology. Although often underutilised and sometimes misused, ICT can offer great opportunities for promoting ESD.

Research

Increase the number of academic and research programmes on ESD

The Moroccan report, in particular, points to the small numbers of existing academic programmes devoted to SD, and calls for an increase in academic and research programmes on sustainability issues.

Raising Awareness

Further explain and advocate the concept of ESD

National capacities and awareness of sustainability issues and sustainable development are limited and should be further fostered. The Viet Nam case study mentions the popular misconception that ESD is a new subject to be taught, a notion met with resistance – as are most changes, particularly when they involve the unknown. Adding "ESD" to established projects and programmes could alienate key stakeholders or at least lead to a loss of interest if new partners are involved. This misconception must be addressed to ensure full adoption of ESD by all stakeholders. In Morocco, the population would most likely be more proactive in the implementation of ESD if extra efforts were made to better explain the concept of SD in the broad sense and its importance for the country.

Networks and Partnerships

Promote partnerships for ESD, involve active NGOs further, and support university networks for the development of ESD

The Moroccan report stresses that more efficient collaboration between different government ministries and NGOs and other associations could result in faster and more effective implementation of a SD culture and ESD. National networking and information sharing between different stakeholders related to SD and ESD should be encouraged, and the media should be more formally engaged in awareness raising of ESD. The South African report highlights the importance of further regional networking, both formally and informally, as demonstrated by the Southern African Development Community's Regional Environmental Education Programme (SADC-REEP) and the MESA (Mainstreaming Environment and Sustainability in African Universities) Programme. Informal networks (district and provincial environmental education forums) are seen as a huge mobilising potential for ESD.

Acronyms

List of Acronyms

ABET	Adult Basic Education and Training (South Africa)
AEEPO	Association d'Education Environnementale et de Protection des Oiseaux au Maroc (Morocco)
AED	Private Enterprise Association for Development (Costa Rica)
AESVT	Association des Enseignants des Sciences de la Vie et de la Terre (Morocco)
AIDS	Acquired Immunodeficiency Syndrome
ANA	Annual National Assessments (South Africa)
ANC	African National Congress (South Africa)
ASPnet	UNESCO Associated Schools Project Network
ATL	active teaching and learning (Viet Nam)
AUI	Al Akhawayn University in Ifrane (Morocco)
CABs	County Administrative Boards (Sweden)
CAPs	Curriculum Assessment Policy Statements (South Africa)
CBO	Community-based organization
CCM	child-centred teaching methodology (Viet Nam)
CDER	National Centre for Renewable Energy Development (Morocco)
CERE	Centre for Environment Research and Education (Viet Nam)
CEREPROD	Centre of Research and Promotion of ESD (Viet Nam)
CFSL	Child-Friendly School Libraries (Viet Nam)
CIEA	Inter-University Commission on Environmental Education (Costa Rica)
CITI	Centre of IT Innovation and Human Development (Morocco)
CJC	Central Johannesburg College (South Africa)
CLCs	Community learning centres
CONARE	National Council of Rectors (Costa Rica)
CONEA	National Commission on Environmental Education (Costa Rica)
CONNEP	Consultative National Environmental Policy Process (South Africa)
CREADS	Education for Sustainable Development Regional Course (Costa Rica)
CRPL	Centre of On-line Pedagogical Resources (Costa Rica)
CSI	Corporate Social Investment
CSO	Civil Society Organisation
CSR	Corporate Social Responsibility
DBE	Department of Basic Education (South Africa)
DCC	Division for Climate Change (Costa Rica)
DCD	Division of Curricular Development (Costa Rica)
DEA	Department of Environment Affairs (South Africa)
DESD	United Nations Decade of Education for Sustainable Development
DICE	Department of Inter-cultural Education (Costa Rica)
DSL	Division of Student Life (Costa Rica)
DST	Department of Science and Technology (South Africa)
DTEA	Department of Teachers and Educational Administrators (Viet Nam)
DTI	Department of Trade and Industry (South Africa)
EBBP	Ecological Blue Banner Programme (Costa Rica)
EBBPS	Ecological Blue Banner for Schools Programme (Costa Rica)
EBNC	Educational Model Based on Competences (Costa Rica)
ECCESDUP	The Earth Charter Centre for Education in Sustainable Development at the University for Peace (Costa Rica)
ECD	Early Childhood Development (South Africa)
ECE2D	Ecology, Conservation of the Environment for Sustainable Development (Morocco)
ECI	Earth Charter Initiative
ECODES	National Strategy for Conservation and Sustainable Development (Costa Rica)
EE	Environmental Education
EEPI	Environmental Education Policy Initiative (South Africa)
EMAS	European Eco-Management and Audit Scheme
EPWP	Expanded Public Works Programme (South Africa)
EQUIP	Education Quality Improvement Partnerships (South Africa)
ESD	Education for Sustainable Development
ESSP	Environmental Sector Skills Plan (South Africa)
ETDP SETA	Training and Development Practices Sector Education and Training Authority (South Africa)

FAO	Food and Agriculture Organization of the United Nations
FEE	Foundation of Economic Education (Morocco)
FET	Further Education and Training
FGASA	Field Guiding Association of South Africa
FME	Formative Monitoring and Evaluation (South Africa)
FM21	Fondation Marrakech 21 (Morocco)
FOD	Omar Dengo Foundation (Costa Rica)
FRIEND	Flow Regimes from International Experimental and Network Data (Morocco)
GCNV	Global Compact Network Viet Nam
GDP	Gross domestic product
GIZ	German Agency for International Cooperation
GoV	Government of Viet Nam
GRESD	Swedish Graduate School in Education and Sustainable Development
HIV	Human Immunodeficiency Virus
HRDSA	Human Resource Development Strategy for South Africa
ICT	Information and communication technologies
IEC	Information, education and communication
INA	National Learning Institute (Costa Rica)
INBio	National Biodiversity Institute of Costa Rica
IRESD	Institute for Research in Education and Sustainable Development (Sweden)
ISESCO	Islamic Educational, Scientific and Cultural Organization
ITCR	Instituto Tecnológico de Costa Rica
ITPs	International Training Programmes (Sweden)
JFIT	Japanese Funds-In-Trust
JICA	Japan International Cooperation Agency
KOICA	Korean International Cooperation Agency
MAB	Man and Biosphere Programme (UNESCO)
MDGs	Millennium Development Goals
MEP	Ministry of Public Education (Costa Rica)
MESA	Mainstreaming Environment and Sustainability in African Universities (South Africa)
MINAET	Ministry of Environment, Energy, and Tele-communications (Costa Rica)
MOET	Ministry of Education and Training (Viet Nam)
M6FE	Mohammed VI Foundation for the Protection of Environment
NatCom	National Commission for UNESCO (Viet Nam)
NBI	National Business Initiative (South Africa)
NCS	National Curriculum Statement (South Africa)
NCSD	National Council on Sustainable Development (Viet Nam)
NECC	National Education Coordinating Committee (South Africa)
NEEP-GET	National Environmental Education Project for General Education and Training (South Africa)
NEMA	National Environmental Management Act (South Africa)
NFSD	National Framework for Sustainable Development (South Africa)
NGOs	Non-governmental organizations
NGP	New Growth Path (South Africa)
NIEM	National Institute of Education Management (Viet Nam)
NMI	National Meteorological Institute (Costa Rica)
NPO	Non-profit organization
NSDS 111	National Skills Development Strategy (South Africa)
OET	Organization for Tropical Studies (Costa Rica)
PARLATINO	Latin American Parliament
PPP	Public Private Partnerships
RCE	Regional Centre of Expertise
REDIES	Network of Sustainable Institutions of Higher Education (Costa Rica)
REMASD	resource materials on sustainable development (Viet Nam)
SACE	South African Council of Educators
SADC	Southern African Development Community
SADC-REEP	Southern African Development Community's Regional Environmental Education Programme
SANBI	South African National Biodiversity Institute
SD	Sustainable Development
SEC	Supreme Educational Council (Costa Rica)
SEED	School Development through Environmental Education (Sweden)

Sida	Swedish International Development Cooperation Agency
SINAC	National System of Areas of Conservation (Costa Rica)
SINADES	National System for Sustainable Development (Costa Rica)
SNP	State of the Nation Programme (Costa Rica)
SUMA	Sub-commission on University and Environment (Costa Rica)
SWEDESD	Swedish International Centre of ESD
TEC	The Earth Charter (Costa Rica)
TVET	Technical and Vocational Education and Training
TLSF	Teaching and Learning for Sustainable Future tool (UNESCO)
UCI	University for International Cooperation (Costa Rica)
UCR	Universidad de Costa Rica
UCT	University of Cape Town (South Africa)
UNA	Universidad Nacional (Costa Rica)
UNCED	United Nations Conference on Environment and Development
UNECE	United Nations Economic Commission for Europe
UNED	Universidad Estatal a Distancia (Costa Rica)
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNDP	United Nations Development Program
UNLD	United Nations Literacy Decade
UPEACE	University for Peace (Costa Rica)
USMBA	Sidi Mohammed Ben Abdellah University (Morocco)
VBCSD	Viet Nam Business Council for Sustainable Development
VCCI	Viet Nam Chamber of Commerce and Industry
VCEL	Virtual Community for Environmental Learning (Costa Rica)
VFEJ	Viet Nam Forum of Environmental Journalists
VNIES	Viet Nam National Institute for Educational Science
VVOB	Flemish Association for Development Cooperation and Technical Assistance
WESSA	Wildlife and Environment Society of South Africa
WWF	World Wide Fund for Nature
YMP	Young Masters Programme on Sustainable Development (Sweden)
ZAR	South African Rand

References

References

Costa Rica

Arias Sánchez, O. 2006. *Peace with Nature, Conceptual Document*. Office of the President of Costa Rica.

Guier Serrano, E.; Rodríguez Morales, M. and Zúñiga Chaves, M. E. 2009. Educación Ambiental en Costa Rica: tendencias evolutivas, perspectivas y desafíos. *Revista Biocenosis*, Vol. 18, No. 1-2, p. 2-25.

Hernández Rojas, L. M.; Carrillo Delgado, M. de los Angeles; Charpentier Esquivel, C.; Brenes Chacón, O. E.; García Fallas, J.; Mata Segreda, A.; Zúñiga Vega, C. and Arnáez Serrano, E. 2006. The Environmental Dimension in University Curriculum: A Process of Change in Professional Education. *Revista Electrónica Actualidades Investigativas en Educación,* Vol. 6, No. 1, ISSN 1409-4703.

Jiménez-Elizondo, A. 2010. CREADS, A Teacher Training Course on ESD in Costa Rica. *Journal of Education for Sustainable Development,* Vol. 4, No. 2, p. 227-234.

Ministerio de Ambiente y Energía. 2005. *Sistema Nacional de Areas de Conservación (SINAC)*, San José, MINAET.

Ministerio de Ambiente y Energía. 2009. *Estrategia Nacional de Cambio Climático de Costa Rica.* San José, MINAET.

Mora Rodríguez, J. 2010. *Educando en Tiempos de Cambio, Memoria Institucional 2006–2010.* San José, Ministerio de Educación Pública.

Programa Estado de la Nación en Desarrollo Humano Sostenible. 2010. *Estado de la Nación en Desarrollo Humano Sostenible*, *Informe 16.* San José, Programa Estado de la Nación.

Programa Estado de la Nación en Desarrollo Humano Sostenible. 2011. *Estado de la Nación en Desarrollo Humano Sostenible*, *Informe 17.* San José, Programa Estado de la Nación.

Salmerón Alpízar, X. 2011. *Decimoséptimo Informe Estado de la Nación (2010, Ambiente y Educación*, non published document, Consejo Nacional de Rectores, Defensoría de los Habitantes de la República), San José, Programa Estado de la Nación.

Supreme Education Council. 2008. *The Quality Educational Center as the Axis of Costa Rican Education*. San José, Ministry of Education.

Zúñiga Vega, C.; García Fallas, J.; Arnáez Serrano, E.; Hernández Rojas, L.; Carrillo Delgado, M. de los Angeles; Charpentier Esquivel, C.; Rojas Núñez, P. and Arguedas Quirós, S. 2011. Building a Virtual Community for Environmental Learning (Vcel): An Interactive Space to Enhance Environmentalism into the Regular Obligations of Public Universities in Costa Rica. *Revista Actualidades Investigativas en Educación*, Vol. 11, Special Issue, p. 1-23.

Morocco

Académie Hassan II des Sciences et Techniques. 2011. *Territoire et développement durable*. Bulletin d'information de l'Académie Hassan II des Sciences et Techniques, n° 9, juin 2011.

Académie Régional de l'Education et de la Formation de Meknès-Tafilelt. 2011. *Guide des zones humides*, Février 2011 (in Arabic).

Association des Enseignants des Sciences de Vie et de la Terre. n.d. *Protection of the Merja Zerga Lagoon*: For Man and Environment (in Arabic). AESVT.

Association Mohammed VI pour l'Environnement. 2012. *L'école écologique* (in Arabic). www.ecoecoles.ma/. Accessed October 2012.

Berkane, Y. 2004. *Ajustement, développement durable et enseignement supérieur au Maghreb*, Colloque le Développement durable : leçons et perspectives. Ougadougou, Burkina Faso, p. 17-24.

Chargé de l'Alphabétisation et de l'Education Non Formelle. Association d'éducation environnementale et de protection des oiseaux au Maroc (SEEPOM). www.refae.org/index.php?rubrique=description-association&id=132.

Chraibi, L. 2008. *Le développement durable à l'ENSA de Tanger* : Etat des lieux et perspectives, Colloque sur l'Education au Développement Durable : De l'école au campus, Albi, 2008.

Colombo, S. 2011. *Morocco at the Crossroads*: Seizing the Window of opportunity for sustainable development, Med Pro Report. www.medpro-foresight.eu. Accessed October 2012.

Commission Spéciale d'Education Formation. 1999. Charte nationale d'éducation et de formation. The Commission.

Confédération Générale des Entreprises du Maroc, CGEM. 2007. *Livre blanc : pour renforcer et consolider le dynamisme de l'économie marocaine*. CGEM. www.cgem.ma/doc1/ed-cgem/siege/1.pdf.

Grefft-Alami, A. 2006. *Comprendre le développement humain.* Rabat, Ministère du Développement Social de la Famille et de la Solidarité.

Idllalène, S. 2010. *La charte marocaine de l'environnement et du développement durable sera-t-elle une loi fondamentale ?* Vertigo, Revue électronique en sciences de l'environnement, Débats et Perspectives, 2010 www.vertigo.revues.org/9956.

Initiative Nationale pour Le Développement Humain. 2006. *Plan de gestion de l'environnement.* Appui de la Banque Mondiale, Juin 2006.

ISESCO. 2002. *Islamic World and Sustainable Development: Specifics, Challenges, and Commitments.* Documents of the First Islamic Conference of Ministers of Environment presented to the International Summit of Sustainable Development in Johannesburg, 2002. Publications of ISESCO.

Lopez, L. 2010. *L'éducation au développement durable ; un outil du changement de mentalités*, Avril 2010. http://principal.charten_.ma.

Royaume du Maroc. 2005. *Le Plan de Travail Nationale pour l'Enfance 2006-2015* : Un Maroc à la hauteur de ses enfants, 2005 (in Arabic). Royaume du Maroc.

Louis, M. 2004. *Atelier thématique: Éducation, formation professionnelle et enseignement supérieur*, Ougadougou, Burkina Faso, 2004, p. 42-45.

Ministère de l'Education Nationale, de l'Enseignement Supérieur, de la Formation des Cadres et de la Recherche Scientifique. 1999. *Education Reform.* www.men.gov.ma/sites/fr/Lists/Pages/charte.aspx. Accessed October 2012.

Ministère de l'Education Nationale, de l'Enseignement Supérieur, de la Formation des Cadres et de la Recherche Scientifique. *Emergency Programme 2009-2012.* www.men.gov.ma/sites/fr/PU-space/default.aspx. Accessed October 2012.

Ministère de l'Education Nationale, de l'Enseignement Supérieur, de la Formation des Cadres et de la Recherche Scientifique, Direction de l'Evaluation, de l'Organisation de la Vie Scolaire et des Formations Communes entre les Académies. 2008. *Guide de la vie scolaire* (in Arabic). Rabat, MENESFCRS.

Ministère de l'Education Nationale, de l'Enseignement Supérieur, de la Formation des Cadres et de la Recherche Scientifique et WWF. 2010. *Rencontre des jeunes et la science au profit du développement*, Octobre 2010 (in Arabic). Rabat, MENESFCRS.

Ministère de l'Education Nationale, de l'Enseignement Supérieur, de la Formation des Cadres et de la Recherche Scientifique, Haut Commissariat des Eaux et Forêts et à la Lutte Contre la Désertification. 2008. *Programme pilote d'éducation environnementale sur les zônes humides* : Cas du Lac Afennourir (Moyen Atlas), Bird Life International Programme Maroc 2008.

Ministère de l'Education Nationale, de l'Enseignement Supérieur, de la Formation des Cadres et de la Recherche Scientifique, Direction des Sciences. 2009a. *Les priorités nationales de recherche : Programmes, axes et thèmes définies en fonction des orientations des stratégies gouvernementales en matière de développement*, Période 2009-2012. Rabat, MENESFCRS.

Ministère de l'Education Nationale, de l'Enseignement Supérieur, de la Formation des Cadres et de la Recherche Scientifique, Direction des Sciences. 2009b. *Stratégie nationale pour le développement de la recherche scientifique à l'horizon 2025 mise en œuvre à travers le programme d'urgence 2009-2012*. Rabat, MENESFCRS.

Ministère de l'Education Nationale, de l'Enseignement Supérieur, de la Formation des Cadres et de la Recherche Scientifique, Direction des Sciences. 2009c. *Structuration de la recherche scientifique dans les universités.* Rabat, MENESFCRS.

Ministère de l'Education Nationale, de l'Enseignement Supérieur, de la Formation des Cadres et de la Recherche Scientifique. 2008. *Pour un nouveau souffle de la réforme*. Présentation du Programme NAJAH 2009-2012, Rapport de synthèse. Rabat, MENESFCRS.

Mouline, M.T. and Lazrak, A. 2005. *50 ans de développement humain et perspectives 2025*. Rapport sur les perspectives du Maroc à l'horizon 2025 : Pour un développement humain élevé. Royaume du Maroc.

Nations Unies. 2011. Maroc, Plan d'Action Commun, UNDAF 2012-2016. www.pnud.org.ma/pdf/UNDAF_2012-2016.pdf . Accessed October 2012.

Observatoire National des Droits de l'Enfance. 2010. *Appel du parlement de l'enfant pour la protection de l'environnement*, 23 Octobre 2010.

Royaume du Maroc. 2008. *Stratégie Nationale d'Éducation et de Sensibilisation à l'Environnement et au Développement Durable.* Document élaboré dans le cadre du projet de "Renforcement des capacités nationales en matière d'éducation et de sensibilisation à l'environnement dans les domaines de la biodiversité, des changements climatiques et de la désertification" (Projet ENV/2004/081-284) soutenu financièrement par l'Union Européenne, 2008. http://www.biodiv.be/maroc/manag_cons/nsap_ma/Strategie_Nationale_ESE_pr_DD.pdf. Accessed October 2012.

Secrétariat d'Etat auprès du Ministre de l'Education Nationale, de l'Enseignement Supérieur, de la Formation des Cadres et de la Recherche Scientifique, Chargé de l'Alphabétisation et de l'Education Non Formelle. 2004. *Stratégie d'alphabétisation et d'éducation non formelle*. http://planipolis.iiep.unesco.org/upload/Morocco/Morocco_Strategie_education_nonformelle_alphabetisation_2004.pdf. Accessed October 2012.

Smaghue, N. 2010. *L'éducation au développement durable: Comment faire ? Quelles ressources pour quelles pratiques ?* Cahiers Pédagogiques, n° 478, janvier 2010. www.ienmaroc.org/articles.php?lng = fr&pg = 85&prt =

UNESCO. 2008. *DESD Quarterly Highlights*, March 2008. Paris, UNESCO.

UNESCO. 2010. *Tomorrow Today.* Leicester, Tudor Rose.

UNESCO. 2011a. *National Journeys towards Education for Sustainable Development*, 2011. Paris, UNESCO.

UNESCO. 2011b. *Report by the Director-General on the implementation of the UNESCO strategy for the second half of the United Nations Decade of Education for Sustainable Development (DESD)*, General Conference, 36th Session. Paris, UNESCO.

Yahyaoui, Y. 2004. *Relation formation-emploi et développement durable*. Colloque sur le Développement durable : leçons et perspectives, Ougadougou, Burkina Faso, 2004, p. 129-135.

South Africa

Delta Environmental Centre. 2011. Environmental Education in Action. www.deltaenviro.org.za. Accessed August 2011.

Department of Basic Education. 2010. *Education for All*. Country Report: South Africa 2010. Pretoria, Department of Basic Education.

Department of Basic Education. 2011. *Report on the Annual National Assessments of 2011*. Pretoria, Department of Basic Education.

Department of Education. 1995. *White Paper on education and training.* Pretoria, Department of Education.

Department of Education. 2002. *Revised National Curriculum Statement: Overview.* Pretoria, Department of Education.

Department of Education. 2008. *Education for Sustainable Development in South Africa: A Framework for Action.* Department of Education, unpublished.

Department of Environmental Affairs. 2010a. *Comment On The Revised Seta Landscape and NSDS iii*: Environmental Sector Submission. First Draft. Pretoria, DEA.

Department of Environmental Affairs. 2010b. *Environmental Sector Skills Plan for South Africa. A systems approach to skills planning and human capital development. Summary document, second draft, May 2010.* Pretoria, DEA.

Department of Environmental Affairs. 2010c. *Towards a resource efficient, low carbon, pro-employment growth path. Discussion document prepared for the Green Economy Summit, 18-29 May 2010*. Pretoria, Department of Economic Development, Department of Environmental Affairs, Department of Science and Technology, Department of Trade and Industry.

Department of Environmental Affairs. 2011. *National Strategy for Sustainable Development and Action Plan.* Pretoria, DEA.

Department of Environmental Affairs and Tourism. 2008. *People – Planet – Prosperity. A National Framework for Sustainable Development in South* Africa, July 2008. Pretoria, DEAT.

Department of Health. 2000. HIV/AIDS/STD Strategic Plan for South Africa 2000-2005. Pretoria, Department of Health.

Department of Higher Education and Training. 2010a. *Strategic Plan 2010-2015*. Pretoria, Department of Higher Education.

Department of Higher Education and Training. 2010b. *Human Resource Development South Africa*. Draft Strategy 2010-2030. www.info.gov.za/issues/education/index.html

Department of Higher Education and Training. 2011. *National Skills Development Strategy III*. Pretoria, Department of Higher Education and Training.

GIZ. 2011. *Education for Sustainable Development (ESD). Leadership Training Course Announcement*. Bonn/Eschborn, GIZ. http://www2.leuphana.de/copernicus/fileadmin/user_upload/downloads/ESD_Leadership_Training.pdf. Accessed August 2011.

Human Resource Development Council for South Africa. 2011. *Human Resources Planning and Development Strategic Frameworks:* Minister of Higher Education and Training and Department of Public Service and Administration briefing. http://www.pmg.org.za/report/20110914-minister-public-service-and-administration-human-resource-plan-and-hu. Accessed August 2011.

Human Sciences Research Council. 2009. *Guidelines towards a Human Capital Development Strategy in the Biodiversity Sector. Research report produced for the Lewis Foundation and the South African National Biodiversity Institute (SANBI)*. Pretoria, HSRC.

MediaClubSouthAfrica. 2011. *Education in South Africa*. www.mediaclub.southafrica.com. Accessed November 2011.

National Planning Commission. 2011. *Education and Skills Development*. www.npconline.co.za/pebble.asp?relid = 25. Accessed Nevember 2011.

NBI. 2009. *Education Quality Improvement Partnerships (EQUIP) Programme.* http://www.nbi.org.za/PastSuccesses/EQUIP/Pages/default.aspx. Accessed August 2011.

NEEP-GET. 2005a. *A critical dialogues monograph: Building capacity for environmental learning in South Africa's education system: Openings for the UN decade on education for sustainable development.* Howick, National Environmental Education Project for General Education and Training / Share-Net.

NEEP-GET. 2005b. *National Environmental Education Programme for General Education and Training: Lessons Learned*. Howick, National Environmental Education Project for General Education and Training / Share Net.

Ramsarup, P. 2006. *Cases of recontextualising the environmental discourse in the National Curriculum Statement (R-9)*. Master's thesis, Rhodes University.

REAP. 2011. The Rural Education Access Programme. http://www.reap.org.za/ Accessed August 2011.

Rosenberg, E. (et al). 2009. *Higher Education and the Environmental Sector in South Africa: Quality and Relevance of Provisioning*. Grahamstown/Pretoria, Rhodes University Environmental Education and Sustainability Unit/Department of Environmental Affairs.

Rosenberg, E. and Burt, J. 2009a. *Vocational / Further Education and Training in South Africa: Quality Considerations for the Environmental Sector*. Grahamstown, Rhodes University Environmental Education and Sustainability Unit.

Rosenberg, E.; Nsubugungu, Y. and Burt, J. 2009b. *Quality and Relevance in South African Schooling: Implications for human capital development in the environmental sector.* Grahamstown, Rhodes University Environmental Education and Sustainability Unit.

Rosenberg, E.; Raven, G.; Nsubungu, Y.; Mosidi, S.; Ramsarup, P. and Burt, J. 2009c. *How about a Biologist? A short report on career guidance for school leavers*. Rhodes University Environmental Education and Sustainability Unit, Grahamstown

SANBI. 2011. *Education and Human Capacity Development.* http://www.sanbi.org/programmes/education. Accessed August 2011.

SANParks. 2010. *Environmental Affairs Deputy Minister launches Green Initiative for Gauteng schools*, Media Release, 29 September 2010. www.sanparks.org/about/news/default.php?id = 1537. Accessed August 2011.

Skills-Universe. 2011. *Minister Blade Nzimande introduces NSDS 3.* http://www.skills-universe.com/forum/topics/minister-blade-nzimande. Accessed August 2011.

Soul City Institute. Health and Development Communication. 2011. *Education Material & Training.* http://www.soulcity.org.za/training Accessed August 2011.

Southafrica.info. 2011. *Education*. http://www.southafrica.info/about/education/. Accessed August 2011.

South Africa. The Good News. 2011. *College becomes the first to train tomorrow's youth.* http://SAGoodnews.co.za. Accessed August 2011.

South African Government. 1996. Constitution of the Republic of South Africa, 1996. http://www.info.gov.za/documents/constitution/1996/96cons2.htm. Accessed December 2012.

South African Government. 2010. *Framework of the New Economic Growth Path*. http://www.info.gov.za/view/DownloadFileAction?id = 135748. Accessed December 2012.

Togo, M. 2010. Environmental Sustainability at Rhodes University. In: Burt, J.; Lotz-Sisitka, H. (eds.). *2010 Environmental Learning Research Dialogue*. Grahamstown, Environmental Learning Research Centre, Rhodes University.

UNESCO. 2004. *International Clearinghouse on Curriculum for HIV/AIDS Preventive Education.* http://portal.unesco.org/education/en/ev.php-URL_ID = 3583&URL_DO = DO_TOPIC&URL_SECTION = 201.html. Accessed August 2011.

UNESCO. 2009a. *Bonn Declaration*. UNESCO World Conference on Education for Sustainable Development, 30 March-2 April 2009. Bonn, UNESCO.

UNESCO. 2009b. *Review of Contexts and Structures for Education for Sustainable Development*. Paris, UNESCO.

UNICEF. 2005. *National Integrated Plan for Early Childhood Development in South Africa 2005-2010*. Pretoria, UNICEF.

University of Cape Town. 2011. Green Campus Initiative. http://www.uct.ac.za/about/initiatives/greencampus/. Accessed August 2011.

UNU-IAS. 2012. RCE KwaZulu Natal. http://www.ias.unu.edu/sub_page.aspx?catID=108&ddlID=998. Accessed 28 November 2012.

WESSA. 2011. WESSA website. www.wessa.org.za. Accessed August 2011.

Young, John. 2011. Corporate Social Investment - SA companies giving back. Cape Town, Trade Invest South Africa. http://www.tradeinvestsa.co.za/feature_articles/485003.htm. Accessed August 2011.

Sweden

Baltic 21 Series. 2002. An Agenda 21 for Education in the Baltic Sea Region – Baltic21E. *Baltic 21 Series,* No. 1/2002. 31 p. http://www.hu2.se/hu2old/Baltic21E.pdf. Accessed 16 February 2012.

Breiting, S., Mayer, M. and Mogensen, F. 2005. Quality Criteria for ESD-Schools –Guidelines to Enhance the Quality of Education for Sustainable Development. Available in a number of languages on www.seed-eu.net. Accessed 26 April 2012.

Breiting, S. and Wickenberg, P. 2010. The progressive development of environmental education in Sweden and Denmark. *Environmental Education Research*, London, Volume 16, Issue 1, February 2010, p. 9-37.

Carson, R. 1962. Silent Spring. Houghton Mifflin, Boston, MA. 368 p.

Church of Sweden's Position on Climate Change and Development. 2008. http://www.svenskakyrkan.se/default.aspx?id=643494. Accessed 3 March 2012.

European Commission. 2007. Key competences for lifelong learning – European Reference Framework. http://ec.europa.eu/dgs/education_culture/publ/pdf/ll-learning/keycomp_en.pdf Accessed 11 April 2012

Folkbildningsrådet (Swedish National Council of Adult Education). 2006. Folkbildning and Sustainable Development. Stockholm, Folkbildningsrådet. http://www.folkbildning.se//Documents/B_Rapporter/FBR_Sustainable.pdf . Accessed 18 January 2012.

Folkbildningsrådet (Swedish National Council of Adult Education). 2011a. A world worth living in. Examples from folkbildning 2011. Stockholm, Folkbildningsrådet. http://www.folkbildning.se/Documents/B_Rapporter/Idéskrifter/FBR_A%20worldworthlivingin2011_web.pdf. Accessed 18 January 2012.

Folkbildningsrådet (Swedish National Council of Adult Education). 2011b. Facts on folkbildning in Sweden. A brief overview. Stockholm, Folkbildningsrådet. http://www.folkbildning.se/Documents/E_Fakta_om_folkbildningen/Facts%20on%20folkbildning_2011_web.pdf. Accessed 16 January 2012.

Folkbildningsrådet (Swedish National Council of Adult Education). 2012. Kvalitetsarbetet och utvecklingen av verksamheten inom folkbildningen [Quality assurance procedures and the development of activities in non-formal adult education]. Stockholm, Folkbildningsrådet. http://www.folkbildning.se//Documents/B_Rapporter/Rapporter_till_regeringen/Rapporter_regeringen_2012/Rapport_Kvalitetsarbete_utveckling_av_folkbildning.pdf. Accessed 14 Mai 2012.

FRI. 2010. Learning Activities at Open Air Museums in Sweden. Policy Document. http://www.nckultur.org/attachments/article/172/FRI%20-%20%20PEDAGOGIK%20POLICY%20-%20EN[1].pdf . Accessed 18 April 2012.

Friman, E. and Borgström Hansson, C. (eds). 2008/2011. Sustainable development and learning inspiration for university teachers. Solna, WWF. http://www.wwf.se/source.php/1395535/Sustainable_development_and_learning.pdf. Accessed 16 April 2012.

International Council for Adult Education. 2011. ICAE Strategic and Action plan 2012- 2014. http://www.icae2.org/files/ICAE_splan2012_2014.pdf. Accessed 18 January 2012.

International Institute for Industrial and Environmental Economics (IIIEE) Lund University. 2012. Annual Report 2011. Lund, Lund University. http://www.iiiee.lu.se/fileadmin/iiiee/Documents/Annual_reports/annual_report_2011_12.pdf. Accessed 27 April 2012.

International Programme Office for Education and Training 2011.The gateway to global knowledge. Brochure. Stockholm, International Programme Office for Education and Training. http://www.programkontoret.se/Global/internationalisering/broschyrer/IPK_ENG_120208.pdf. Accessed 24 April 2012.

Lindberg, C. 2012. Att främja Utbildning för Hållbar Utveckling (To Promote Education for Sustainable Development). Acceptance speech for his honorary doctorate in Educational Sciences, Uppsala University, 25 January 2012.

Mustel, K. 2003. Folkbildningens insatser för hållbar utveckling (Efforts on sustainable development in non-formal adult education). Stockholm, Folkbildningsrådet. http://www.resurs.folkbildning.net/PageFiles/13509/FBR_HllbarUtveckling2002.pdf. Accessed 18 January 2012.

Nordic Council of Ministers. 2009a. Sustainable Development – New Bearings for the Nordic Region. Revised edition with goals and priorities 2009–2012. Copenhagen, Nordic Council of Ministers. http://www.norden.org/en/publications/publikationer/2009-727. Accessed 23 Feburary 2012.

Nordic Council of Ministers. 2009b. Nordic Sustainable Development Indicators 2009. Copenhagen, Nordic Council of Ministers. http://www.norden.org/en/publications/publikationer/2009-733. Accessed 23 February 2012.

Regeringsförklaring 22 mars 1996 [Statement of Government Policy, 22 March 1996] http://www.regeringen.se/content/1/c6/01/14/61/aad0bcd0.pdf. Accessed 13 February 2012.

Regeringskansliet. 1998/99. Hållbara Sverige – uppföljning och fortsatta åtgärder för en ekologisk hållbar utveckling (Written communication from the Government, 1 Oct. 1998). *Regeringens skrivelse 1998/99: 5*. http://www.sweden.gov.se/content/1/c4/29/70/6d4024a1.pdf. Accessed 13 February 2012.

Regeringskansliet. 2002. A summary of Government Communications 2001/02:172 Sweden's National Strategy for Sustainable Development 2002. Stockholm, Regeringskansliet. http://www.sweden.gov.se/content/1/c6/02/05/15/a64eb2d7.pdf. Accessed 16 February 2012.

Regeringskansliet. 2009. From Preschool Pedagogy to Nanotechnology –Education and Research in Sweden. Stockholm, Regeringskansliet. http://www.regeringen.se/content/1/c6/13/10/18/5637cac9.pdf. Accessed 23 April 2012.

Sandell, K., Öhman, J. and Östman, L. 2005. Education for Sustainable Development – Nature, School and Democracy. Lund, Studentlitteratur.

Skolverket. 1994. Överenskommet! Fyra internationella överenskommelser som ligger till grund för de nya läroplanerna. (Agreed! Four International Agreements as a Basis for the New Curricula.). Stockholm, Statens skolverk.

Skolverket. 2001a. Developing an overall approach: Efforts by pre-schools and schools to achieve the Green School Award 1999-2001. Stockholm, Skolverket (unpublished).

Skolverket. 2001b. The Green School Award in Sweden. Stockholm, Liber Distribution.

Skolverket. 2011a. Curriculum for the compulsory school, pre-school class and the leisure-time centre 2011. Stockholm, Skolverket. Available on www.skolverket.se/publikationer. Accessed 24 Jannuary 2012.

Skolverket. 2011b. Curriculum for the Preschool Lpfö 98. Revised 2010. Stockholm, Skolverket. Available on www.skolverket.se/publikationer. Accessed 23 April 2012.

Skolverket. 2011c. Upper Secondary School 2011. Curriculum. Stockholm, Skolverket. Available on www.skolverket.se/publikationer. Accessed 23 April 2012.

Statens Offentliga Utredningar (SOU). 2004. Att lära för hållbar utveckling. *SOU 2004:104.* (Swedish Government Official Reports 2004:104, To learn for sustainable development). Stockholm, Regeringskansliet. http://www.regeringen.se/content/1/c6/03/41/44/0fe2bc94.pdf. Accessed 22 February 2012.

Svenska Unescorådet (Swedish National Commission for UNESCO). 2008. Yttrande över SOU 2008:27 Framtidsvägen – en reformerad gymnasieskola (Expert opinion on Swedish Government Official Reports 2008:27). Stockholm, Svenska Unescorådet. Available at http://www.unesco.se/bazment/unesco/sv/utbildning/utbildning-for-hallbar-utveckling.aspx. Accessed 20 January 2012.

Svenska Unescorådet (Swedish National Commission for UNESCO). 2009. Yttrande över SOU 2008:109 En hållbar lärarutbildning (Expert opinion on Swedish Government Official Reports 2008:109). Stockholm, Svenska Unescorådet. Available at http://www.unesco.se/bazment/unesco/sv/utbildning/utbildning-for-hallbar-utveckling.aspx. Accessed 20 January 2012.

Svensk författningssamling. 2010. Skollag SFS 2010:800 (The Swedish Education Act) http://www.riksdagen.se/sv/Dokument-Lagar/Lagar/Svenskforfattningssamling/Skollag-2010800_sfs-2010-800/. Accessed 26 February 2012.

Swedish Code of Statutes (SFS) No. 1992:1434. The Swedish Higher Education Act. http://www.hsv.se/lawsandregulations/theswedishhighereducationact.4.5161b99123700c42b07ffe3956.html#svid1. Accessed 26 February 2012.

Swedish Environmental Protection Agency. 2011. Sweden's environmental objectives. http://www.naturvardsverket.se/Documents/publikationer6400/978-91-620-8520-9.pdf. Accessed 27 February 2012.

Swedish International Development Cooperation Agency (Sida). 2012. Education for Sustainable Development in Higher Education. Stockholm, Sida. http://www.rambollnatura.se/services/capacity%20development%20and%20training/~/media/Files/RSE/Natura/Training%20programmes/ESD%20Higher%20Education/257B_ESD%20Higher%20Education%202012.ashx. Accessed 25 April 2012.

UNECE. 2005. UNECE strategy for education for sustainable development. http://www.unece.org/fileadmin/DAM/env/documents/2005/cep/ac.13/cep.ac.13.2005.3.rev.1.e.pdf. Accessed 26 February 2012.

Utbildningsdepartementet. 1994. Läroplaner för det obligatoriska skolväsendet och de frivilliga skolformerna Lpo 94 and Lpf 94 (National Curricula for the Compulsory School System, Lpo 94, and for the Non-Compulsory School System, Lpf 94). Stockholm, Utbildningsdepartementet.

Utbildningsdepartementet. 1998. Läroplan för förskolan (National Curriculum for the Pre-school, Lpfö 98). Stockholm, Utbildningsdepartementet.

von Hofsten, A. 1999. Miljöundervisningen – så har den utvecklats – Naturvårdesverkets perspektiv 1960-90-talet (The Development of Environmental Education – from the Perspective of the Swedish Environmental Protection Agency in the 1960s–1990s). Stockholm, Naturvårdsverket förlag.

Websites

http://www.scb.se/Pages/PressRelease____254451.aspx. Accessed 20 January 2012.

http://www.cbss.org/CBSS-The-Council/history. Accessed 20 February 2012.

http://sekom.sekom.nu/index.php?option = com_content&task = view&id = 41&Itemid = 50. Accessed 26 February 2012.

http://www.hsr.se/sa/node.asp?node = 40. Accessed 26 February 2012.

http://www.iiiee.lu.se/education/young_masters_programme_ymp_in_sustainable_development/. Accessed 16 April 2012.

http://globe.gov/. Accessed 26 April 2012.

http://www.b-s-p.org/home/. Accessed 26 April 2012.

http://www.programkontoret.se/sv/Program-och-stipendier/Program-A---O/Den-Globala-Skolan/. Accessed 26 April 2012.

http://apps.forskning.se/InfactPlaneten/index.html?lang = eng. Accessed 23 April 2012.

http://www.forskning.se/omwebbplatsen/inenglish.4.303f5325112d733769280001889.html. Accessed 23 April 2012.

http://www.icae2.org/?q = en/node/1450. Accessed 26 February 2012.

http://www.sverigesmuseer.se/stafettbloggen/2012/04/pernilla-schedin-en-hallbar-framtid-for-museerna/. Accessed 18 April 2012.

http://www.swedesd.se/home. Accessed 26 April 2012.

http://www.rceskane.se/default.aspx?lang = en-gb. Accessed 20 March 2012.

http://www.rceskane.se/?lang = en-GB. Accessed 20 March 2012.

http://oresundsklassrummet.wordpress.com/in-english/. Accessed 30 March 2012.

Viet Nam

AusAid. 2002. *Vietnam Poverty Analysis*. Canberra and Sydney, Centre for International Economics.

Belgium Development Agency. 2010. *Improving pre- and in-service training of primary and lower secondary teachers in the Northern Highlands of Vietnam* (VIE 0401911) - Project report summary. Last updated Dec 2010. http://www.btcctb.org/en/node/56/projects.

Food and Agriculture Organization of the United Nations. 2009. *Education for Rural People: The Role of Education, Training and Capacity Development in Poverty Reduction and Food Security*. Rome, FAO (Natural Resources Management and Environment Department).

Live & Learn. 2011. *Government and NGOs join hands to advance Climate Change Education.* Media release. http://mailman.anu.edu.au/pipermail/enviro-vlc/2011-April/003509.html. Accessed 25 September 2011.

Live & Learn and Rosa Luxemburg Foundation. 2011. *Survey Report on Youth and Sustainable Development.* Live & Learn and Rosa Luxemburg Foundation. http://www.rosalux.vn/images/stories/rosalux/Documents/LL_Youth_And_Sustainable_Development_Survey_2011.pdf. Accessed 20 September 2011.

Live & Learn. 2011. The He Xanh reports (Green Generation - a network for youth climate awareness and action). 2009-2011. (unpublished documents).

Nguyen, H. 2011. *Promoting the integration of environmental protection into curricula.* Vietnam Agency of Environmental Protection website. http://vea.gov.vn/vn/truyenthong/tapchimt/mtvpt/Pages/2011-11-07-14-54-35.aspx. Accessed 30 September 2011.

Nguyen, T. 2010. *Vietnam: Child-Centred Methodology promotes equality among ethnic minorities school children*. Oxfam website. http://www.oxfamblogs.org/eastasia/?p=788. Accessed 20 September 2011.

Oxfam. 2007. Volunteer Network in Disseminating Information, Education, and Communication Messages. In DIPECHO Advocacy Network Initiative: *Community Based Disaster Risk Management: Good Practice Examples.*

Peeraer, J. and Tran, N. 2010. *Integration of ICT in Education in Vietnam: from Policy to Practice.* VVOB, http://www.vvob.be/vietnam/. Accessed October 2011.

Socialist Republic of Viet Nam. 2001a. *The 10-year Socio-Economic Development Strategy 2001-2010.* Ha Noi, Socialist Republic of Viet Nam.

Socialist Republic of Viet Nam. 2001b. *The education development strategic plan for 2001-2010*. Approved by the Prime Minister in Decision No. 201/2001/QD-TTg. 28 December 2001. Ha Noi, Socialist Republic of Viet Nam.

Socialist Republic of Viet Nam. 2001c. *The Scheme on "The Inclusion of Environmental Protection Contents into the Program of the National Education System".* Approved by the Prime Minister in decision No. 1363/QD-TTg. 17 October 2001. Ha Noi, Socialist Republic of Viet Nam.

Socialist Republic of Viet Nam. 2003. *National Education for All – Action Plan 2003-2015.* Approved by the Prime Minister in Government Document No. 872/CP-KG. 02 July 2003. Ha Noi, Socialist Republic of Viet Nam.

Socialist Republic of Viet Nam. 2004. *The Strategic orientation for Sustainable Development in Vietnam* (Vietnam Agenda 21). Approved by the Prime Minister in Decision No. 153/2004/QD-TTg. 17 August 2004. Ha Noi, Socialist Republic of Viet Nam.

Socialist Republic of Viet Nam. 2005a. *Building learning society in the period 2005-2010.* Approved in Decision No. 112/2005/QĐ-TTg. Ha Noi, Socialist Republic of Viet Nam.

Socialist Republic of Viet Nam. 2005b. Decision by Prime Minister No. 1032/QD-TTg dated 27 September 2005 on the establishment of the National Council of Sustainable Development. Ha Noi, Socialist Republic of Viet Nam.

Socialist Republic of Viet Nam. 2005c. *The National Assembly*, Eleventh Legislature, Seventh Session, 14 June 2005. Ha Noi, Socialist Republic of Viet Nam.

Socialist Republic of Viet Nam. 2009. Decision by Prime Minister Decision No. 248/QD-TTg of February 24, 2009, defining the functions, tasks, powers and organizational structure of the National Council for Sustainable Development. Ha Noi, Socialist Republic of Viet Nam.

Socialist Republic of Viet Nam. Ministry of Education and Training. 2010. *Action Plan for Response to Climate Change of Education Sector in the period of 2011-2015.* Ha Noi.

Socialist Republic of Viet Nam. Ministry of Education and Training. 2008a. *Directive on Promoting Teaching, Training and Applying ICT in Education - Period 2008-2012*. Approved in Directive 55/2008/CT-BGDĐT. Ha Noi.

Socialist Republic of Viet Nam. Ministry of Education and Training. 2008b. *Friendly schools and active students in 2008-2013*. Approved in Directive 40/2008/CT-BGDĐT. Ha Noi.

Socialist Republic of Viet Nam. Ministry of Education and Training. 2006. *Current Situation of Vietnamese Education*, updated on 2 October 2006. http://en.moet.gov.vn/?page=6.1&view=3451. Accessed 15 Oct 2011.

Socialist Republic of Viet Nam. Ministry of Education and Training. 2002. *The policy and action plan for Environmental Education during 2001-2010*. Ha Noi.

Socialist Republic of Viet Nam. Ministry of Planning and Investment. General Statistics Office. 2011. *Vietnam Population and Housing Census 2009.* Education in Vietnam: An Analysis of Key Indicators. Ha Noi, Ministry of Planning and Investment. General Statistics Office.

Socialist Republic of Viet Nam. The President. 2005. *The Education Law* comprises of 9 Chapters, 120 Articles and comes into effect from the 1st January 2006, replacing the 1998 Education Law. Adopted by the National Assembly of the Socialist Republic of Vietnam, Eleventh Legislature, Seventh Session, on 14 June 2005. p.3. Ha Noi.

Socialist Republic of Viet Nam. Viet Nam National Committee for the Decade of Education for Sustainable Development. 2010. *National Action Plan of Education for Sustainable Development in Viet Nam 2010-2014*: Teaching and Learning for a Sustainable Development. Decision 850/QĐ-VHĐN-UNESCO. Ha Noi.

Thai, T. 2010. *Community Learning Centre as an essential instrument to Build a Learning Society at grassroots level.* Paper presented at Vietnam Forum Lifelong Learning – Building a Learning Society. Ha Noi.

Thanh, T. 2011. *Each Business Needs Different CSR*. VCCI website, 15 June 2011. http://www.vccinews.com/news_detail.asp?news_id=23409. Accessed 27 October 2011.

UNDP. 2009. *Results-Based Mid-Term Review Report*: *For Implementation of the Five-Year Socio-Economic Development Plan 2006-2010*. Ha Noi.

UNESCO. 2011. *EDUCAIDS country snapshot.* Viet Nam: A model of successful UN family collaboration to support a comprehensive education sector response to HIV and AIDS. Paris and Hanoi, UNESCO and UNAIDS. http://unesdoc.unesco.org/images/0019/001916/191609e.pdf

UNESCO. 2010. *UNESCO Strategy for the Second Half of the United Nations Decade of Education for Sustainable Development.* Supporting Member States and other stakeholders in addressing global sustainable development challenges through ESD. Paris, UNESCO.

UNESCO. 2009a. *Bonn Declaration.* UNESCO World Conference on Education for Sustainable Development, 30 March-2 April 2009. Bonn, UNESCO.

UNESCO. 2009b. *Education for Sustainable Development: A mapping exercise at policy and project level in Viet Nam.* HaNoi, UNESCO (unpublished document).

UNESCO. 2007. *Monitoring and Assessing Progress during the UNDESD in the Asia-Pacific Region*: A Quick Guide to Developing National ESD Indicators. Bangkok, UNESCO Asia and Pacific Regional Bureau for Education.

UNESCO. 2005a. *UN Decade of Education for Sustainable Development 2005-2014: The DESD at a glance.* Paris, UNESCO.

UNESCO. 2005b. *The UN Decade of Education for Sustainable Development (2005-2014): International Implementation Scheme.* Paris, UNESCO.

United Nations. 2011. *Helping Vietnamese youth protect themselves from HIV.* Ha Noi, United Nations Viet Nam. http://www.un.org.vn/en/what-we-do-mainmenu-203/the-un-making-a-difference/1388-helping-vietnamese-youth-protect-themselves-from-hiv.html. Accessed October 2011.

United Nations. 2010a. *Embedding CSR in Vietnam*. Global Compact Network Vietnam website, 19 November 2010. http://www.globalcompactvietnam.org/detail.asp?id = 104. Accessed 1 November 2011.

United Nations. 2010b. *Joint Country Analysis of Viet Nam.* Ha Noi.

United Nations. 2010c. *World Youth Report 2010*: Youth and Climate Change. New York, United Nations.

University of Queensland. 2008. *Closing institutional gaps for sustainable planning and management of Biosphere Reserves across Vietnam.* School of Natural and Rural Systems Management. Media Release, 26 August 2008. http://mailman.anu.edu.au/pipermail/enviro-vlc/2008-August/000600.html. Accessed 3 October 2011.

VietNamNet/Viet Nam News. 2009a. *Lifeskills must be taught in schools.* 27 May 2009. http://english.vietnamnet.vn/education/2009/05/849922/. Accessed 8 October 2011.

VietNamNet/Viet Nam News. 2009b. *New school programme not all fun and games.* 23 Feb 2009. http://english.vietnamnet.vn/education/2009/02/831502/. Accessed 13 Oct 2011.

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