

International Perspectives on
Early Childhood Education and Development 14

John Siraj-Blatchford
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International Research on Education for Sustainable Development in Early Childhood

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International Perspectives on Early Childhood Education and Development

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International Research on Education for Sustainable Development in Early Childhood

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Preface

Sustainable development was first defined in 1987 by the Brundtland World Commission on Environment and Development (WCED 1987) as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987, p. 43).

On 25 September 2015, the United Nations General Assembly adopted 17 new *Sustainable Development Goals* (SDGs) and a total of 169 targets that establish the Development Agenda for United Nations member states until 2030. The SDGs aim to eliminate extreme poverty and hunger and provide quality lifelong education for every child, and they also aim to promote peaceful, inclusive and sustainable societies. They build upon the prior commitments reflected in the UN Millennium Development Goals but go well beyond these and have been framed to apply to all the nations of the world and not just those in most urgent need. In terms of early childhood, the SDGs include very significant goals and targets related to child protection, early childhood education and the reduction of inequality.

SDG 4 specifically refers to the need to “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”. SDG target 4.2 is to “By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education”. But as we shall argue further in the following pages, it is important to recognise the relevance of Early Childhood Care and Education (ECCE) to the achievement of many of the other SDGs:

Goal 1: Eradicate poverty – research shows that ECCE provides one of the most cost-effective strategies for breaking out of vicious cycles in the intergenerational reproduction of poverty.

Goal 2: End hunger and improve nutrition – young children are the first and worse victims, and integrated education and care approaches have been found most effective.

Goal 3: Ensure healthy lives – early interventions set a trajectory for good lifelong health and well-being.

- Goal 4: Ensure lifelong learning* – robust cost-benefit evidence shows that investments in ECCE provide the most positive long-term benefits and economic returns to society.
- Goal 5: Achieve gender equality* – greater investment in high-quality and affordable childcare is directly linked to greater opportunities for women.
- Goal 6: Ensure access to water and sanitation for all* – established Water, Sanitation and Hygiene (WASH) projects currently focused on schools urgently need to be extended to preschools.¹ By 2050, it is projected that at least one in four people is likely to be affected by recurring water shortages.
- Goal 7: Affordable and clean energy* – one in five people lack access to electricity and this contributes significantly to the reproduction of global inequality. Most preschools in rural areas around the world have no access to electricity or to the direct and indirect educational and care technologies that it may support.
- Goal 8: Promote decent work for all* – investments in the professionalisation of the early childhood workforce contribute to full and productive employment.
- Goal 9: Industry and innovation* – creativity, innovation and entrepreneurship are being fostered in many preschools around the world, and these initiatives require further support and encouragement by industry and government.
- Goal 10: Reduce inequality within and among countries* – ECCE has a proven record in reducing the intergenerational reproduction of inequality.
- Goal 11: Make cities and human settlements inclusive, safe, resilient and sustainable* – ECCE provides a popular primary focus and an effective entry point for development planning.
- Goal 12: Ensure sustainable consumption* – these attitudes are formed at an early age and appropriate patterns of behaviour towards consumption and attitudes towards conservation may be set to last a lifetime.
- Goal 13: Climate action* – young children are the primary stakeholders and the first and the greatest victims of climate change. Their active participation in the promotion of public awareness and the political action may be crucial.
- Goal 14: Life below water* – young children have a strong affinity with the seaside and a fascination with marine life. Pollution and the threats to marine biodiversity have reached alarming proportions.
- Goal 15: Life on land* – in the minority world, the early childhood forest school movement has already made a significant contribution to raising public awareness of the issues. These successes need to be supported further and built upon.
- Goal 16: Promote peaceful societies* – intergenerational ECCE interventions contribute by promoting fundamental values and behaviours that reduce violence and promote peace.
- Goal 17: Strengthen the means of implementation* – the measurement of early childhood development and outcomes can serve as a powerful tool for global partnerships.

As Britto (2015) has suggested:

¹<http://www.worldomep.org/wp-content/uploads/2013/12/Wash-from-the-Start-Rationale.pdf>

Investments in ECD are fiscally smart, given the multiplier effect of ECD across several goals. But, they are also scientifically credible and morally correct. Let us affirm our commitment to the Global Goals by giving every child a fair chance in life from the start. (p. 1)

Since the World Summit on Sustainable Development (WSSD) convened in Johannesburg in 2002, it has been widely recognised that education has a major role to play in the realisation of a “vision of sustainability that links economic well-being with respect for cultural diversity, the Earth and its resources” (UNESCO 2007, p. 6). Education for Sustainable Development (ESD) has also been recognised as an integral part of quality Education for All (EFA) as defined in the 2000 Dakar Framework for Action (WEF 2000), and it must begin in the early childhood years and continue through lifelong learning in adulthood (Feine 2012; United Nations Economic and Social Council 2005; Wals 2009). The United Nations 2005 World Summit Outcome Document refers to the “interdependent and mutually reinforcing pillars” of sustainable development as “social development”, “economic development” and “environmental protection”. The key challenges for educators are to develop educational systems, curriculum and pedagogic practices that provide foundations for the development of each of these pillars and to encourage emergent understandings of sustainable development.

Early childhood education has been contributing to some of these areas of concern for many years. Yet the work has often been fragmented and ill defined, and we are currently in a situation where only a small proportion of the international community of early childhood educators are fully aware of the overall objectives and scope of ESD or are adopting an integrated approach to the subject. In this text, we review the “state of play” in terms of ESD in the early childhood educational contexts of 10 countries: Chile, China, Kenya, Korea, Norway, Portugal, Sweden, Turkey, the UK and the USA. We also report upon the efforts that have been made by the individual research teams in each country and through an international collaboration in developing a new research and development tool that we believe has significant potential to support our efforts in promoting an Education for Sustainable Development in Early Childhood settings around the world. All of the work reported in this book has been supported over the past 3 years by the World Organisation for Early Childhood Education (OMEP). The work has not been funded, and the scale of the voluntary work involved itself bears testament to the massive commitment of all of those involved in this project.

The work is especially well targeted and timely. Resolution 57/254 of the United Nations General Assembly declared the period 2005–2014 as the *Decade for Education for Sustainable Development* (DESD) with an overall goal to:

...integrate values, activities and principles that are inherently linked to sustainable development into all forms of education and learning and help usher in a change in attitudes, behaviours and values to ensure a more sustainable future in social environmental and economic terms. (UNESCO 2007, p. 5)

The UNESCO objectives of Education for Sustainable Development (ESD) have been to:

- *Facilitate networking, linkages, exchange and interaction among stakeholders in ESD*
- *Foster an increased quality of teaching and learning in education for sustainable development*
- *Help countries make progress towards and attain the Millennium Development Goals through ESD efforts*
- *Provide countries with new opportunities to incorporate ESD into education reform efforts (UNESCO 2007)*

The work that is reported in this text was thus developed as a contribution to these initiatives and was carried out in collaboration with initiatives by the *Swedish International Centre of Education for Sustainable Development (SWEDESD)*, the *European Panel on Sustainable Development (EPSD)*² and *UNESCO*.³ It has also drawn upon a perspective strongly informed by the latest research, discussions and developments in the wider field of Education for Sustainable Development. It is crucially important that policy makers recognise that early childhood education provides the *foundations* for lifelong learning within education for sustainability. While policy makers now recognise that children have the right to be educated,⁴ there needs to be a clearer understanding that it is in the early years that children have the greatest capacity to learn. It is also in early childhood that the foundations of many of our fundamental attitudes and values are first put into place. From a human rights perspective, young children must be recognised as the citizen group with the greatest stake, and *at stake* in terms of sustainability, and they should also be recognised as potential agents for change. Young children have an influence upon their families and on their communities, and their interests provide a major motivation for changes towards more sustainable thinking and behaviours throughout societies.

Our primary intention in writing this book has therefore been to report upon a major international research collaboration carried out through the OMEP between 2010 and 2013, which has sought to define and support the establishment of an international research and development programme for Education for Sustainable Development in Early Childhood (ESDEC). The volume has also been produced to provide practical support and stimulus for professional researchers, research students and practitioners carrying out their own studies and development work in this crucial area of educational concern.

The *Organisation Mondiale Pour L'Éducation Préscolaire (OMEP) (World Association for Early Childhood Education)* has already provided significant leadership in the area of ESD in ECCE (Wals 2009). OMEP was founded in 1948 in Prague as an international, non-governmental and non-profit organisation concerned

²http://www.ufn.gu.se/digitalAssets/1324/1324488_epsd_report4.pdf

³Samuelsson and Yoshie (2008)

⁴Article 26 of the Universal Declaration of Human Rights (1950). Article 28 of the Convention on the Rights of the Child (1989)

with all aspects of ECCE. The organisation has a long history in the defence and in the promotion of the rights of the child to education and care worldwide. OMEP has membership represented by 73 national committees, from all five regions, Europe, Asia/Pacific, Africa, Latin America, North America and Caribbean. In 2007, UNESCO established a Chair in Early Childhood Education and Sustainable Development at Gothenburg University with the purpose of promoting Education for Sustainable Development (ESD). The SWEDES (2008) “Gothenburg Recommendations on Education for Sustainable Development” were produced by an expert panel of early childhood educators strongly represented by OMEP in collaboration with experts from across the educational life course. They identified an urgent need for capacity building in Early Childhood Education for Sustainable Development. The report argued that:

As an emerging field of practice, early childhood education for sustainability is seriously under-researched. This must be remedied in order to build the field on an evidence-base of critique, reflection and creativity. (SWEDES 2008, p. 31)

The SWEDES recommendations also included the need to:

- *Increase the allocation of resources for research*
- *Initiate research studies that are participatory and action centred, through trans-disciplinary collaboration with professionals from all sectors and discipline*
- *Enable structures and processes that support practitioners to conduct their own research studies*
- *Provide greater research mentoring and capacity building*

A special issue of OMEP’s *International Journal of Early Childhood* published in 2009 focused upon Sustainable Development in Early Childhood, and OMEP has been working on various international development projects in ESD since 2008. Their work began with an interview study based on a logo (Fig. 1) where children



Fig. 1 The child’s voice

were portrayed cleaning the planet: In this *Children's Voices About the State of the Earth and Sustainable Development Project*, 9,142 children between 2 and 8 years of age were interviewed by 641 OMEP interviewers in 28 countries and 385 pre-schools around the world. A report on the project provided a focus for the OMEP World Assembly and World Congress in Gothenburg in 2010 (Engdahl and Rabušicová 2010), and ESD has featured as a dedicated strand of each annual conference since then.

This dirty planet was ugly. When it is dirty we can be ill. When water is dirty the fish will die. The children want health and happiness for everybody (Engdahl and Rabušicová 2010).

Further OMEP world projects have involved children engaged in preschool practices based upon the 7Rs (to Respect, Reflect, Rethink, Reuse, Reduce, Recycle and Redistribute) and in encouraging intergenerational dialogues, where three generations were involved in looking at how food can be grown at home and in the pre-school. Another project, developed in collaboration with UNESCO and *WASH in Schools*, has been the *WASH from the Start* initiative, which addresses the need for all children to be provided with Water, Sanitation and Hygiene facilities and education. The 2013–2014 OMEP world project was also concerned with supporting international projects concerned with Equality for Sustainability and the Rights of the Child.

It has often been noted that the methodological choices applied in educational research are subject to pendulum swings of fashion (McIntyre and McIntyre 2000). In the UK, for example, the quantitative correlation studies that dominated the 1970s were heavily criticised, and this led to the increased use of qualitative methods in the 1980s. These methods were widely considered unfit for purpose by policy makers in the decades that followed (Tooley 1998). And this has led to increased emphasis upon quantitative research. Yet, as McIntyre and McIntyre (2000) suggested, within the academic research community, an ideal *pattern* of research has always been recognised and accepted, where individual qualitative studies should be carried out to establish the most relevant variables, followed by correlation studies that isolate the strongest of these variables, and finally by randomised controlled experiments to identify the strength of their effects. As in every other scientific endeavour, “knowledge” is developed in the process of long-term collaborative and cumulative research programmes, where individual research studies are subjected to peer review, and the relevance of their findings established only after they have been replicated in other contexts. In supporting the research and development of ESDEC, we felt the need to recognise the implications of these processes and that we needed to rise above them to consider the subject at the level of the overall programme of ESDEC research rather than simply at the level of individual studies. This has inevitably led us into discussions of epistemology that are ongoing. Our approach in developing the international collaboration from the start has been to focus most especially upon two elements, the identification of a baseline of practice in ESD in

global early childhood and developing a research programme for ESDEC. In developing the evidence baseline, we have produced an instrument, the *Environmental Rating Scale for Education for Sustainable Development in Early Childhood* (ERS-SDEC), that can be used to evaluate the impact of practice in ESD in a range of contexts. Any attempt at an international comparative pilot study using this tool would have been beyond our resources due to the costs of providing research training across all of the sites and in the provision of inter-rater reliability trials (more information on this is provided in the guidance in [Appendix](#)). There were also epistemological objections. With such a large and diverse collaboration, final conclusions in this were not to be expected (or required) in the short term. Our common commitment has been to the dialogue, and while Chap. 2 identifies many principle areas of contention, we have not sought to resolve them all but rather to learn from the discussion in the spirit of respectful international collaboration and in the interests of professional self-development.

The development of the evidence baseline has been iterative in the process of engaging with practitioners and preschool practice in the development of the instrument and has involved more than 60 preschools located in 11 countries with participating preschools located in Europe, North America, South America, Australia, Africa and the Middle and Far East. We intend that these processes of revision should continue in the future. Our conclusions draw upon this review alongside the evidence baseline to make practical recommendations for short-, medium- and long-term projects that will support research and development in this crucial area of concern. Appendices are also included identifying other relevant and established research instruments, online resources and search tools.

Plymouth, UK

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Contents

1	Education for Sustainable Development in Early Childhood Care and Education: An Introduction	1
	John Siraj-Blatchford and Ingrid Pramling-Samuelsson	
2	The OMEP ESD Research and Development Project	17
	John Siraj-Blatchford	
3	Early Childhood Education for Sustainable Development in Chile	29
	Selma Simonstein	
4	Early Childhood Education for Sustainable Development in China	43
	Xin Zhou, Zhanlan Liu, Chunhong Han, and Guangheng Wang	
5	Early Childhood Education for Sustainable Development in Kenya	59
	Mercy Macharia and Njeri Kimani	
6	Early Childhood Education for Sustainable Development in Korea	77
	Eunhye Park, Eunsoo Shin, and Seenyoung Park	
7	Education for Sustainable Development in Norway	91
	Marianne Presthus Heggen	
8	Education for Sustainable Development in Portugal	103
	Assunção Folque and Vítor Oliveira	
9	Early Childhood Education for Sustainable Development in Sweden	123
	Anne Kultti, Jonna Larsson, Eva Ärlemalm-Hagsér, and Ingrid Pramling-Samuelsson	

10 Education for Sustainable Development in Turkey	139
Gelengül Haktanır, Tülin Güler, and Deniz Kahriman Öztürk	
11 Early Childhood Education for Sustainable Development in the UK.....	155
John Siraj-Blatchford	
12 Early Childhood Education for Sustainable Development in the USA.....	173
Cathy Mogharreban and Shannon Green	
13 Towards a Research Programme for Early Childhood Education for Sustainable Development.....	193
John Siraj-Blatchford	
Appendix: The Environmental Rating Scale for Sustainable Development in Early Childhood (ERS-SDEC).....	211

Chapter 1

Education for Sustainable Development in Early Childhood Care and Education: An Introduction

John Siraj-Blatchford and Ingrid Pramling-Samuelsson

Sustainable development was first defined in 1987 by the Brundtland World Commission on Environment and Development (WCED 1987), which argued for a development strategy that

...meets the needs of the present without compromising the ability of future generations to meet their own needs. (WCED 1987, p. 43)

From a citizenship perspective, it is therefore clear that the citizen group with the greatest stake in achieving sustainability *are* children. In fact the younger the child, the greater their stake in the future is. As Little and Green (2009) point out, more recent and complete definitions of sustainable development drawn from the 1987 Commission report contain two additional key concepts:

The concept of 'need', in particular the essential needs of the world's poor, to which overriding priority should be given, and;

The idea of limitations imposed by the state of technology and social organisation on the environment's ability to meet present and future needs. (WCED 1987, p. 43)

Agenda 21, adopted by most of the world's governments at the Rio de Janeiro 'Earth Summit' (UNCED 1992), also introduced the notion of *sustainable consumption* and the idea that people in rich countries needed to change their consumption patterns if sustainable development was to be achieved. The work of Amartya Sen has also been influential. Sen argued that while the WCED (1987) *need*-centred view of development was *illuminating*, it was *incomplete* (Sen 2000, p. 2). He argued that individuals should be seen as *agents who can think and act* and not like

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patients whose needs had to be catered for (ibid, p. 2). If we are to support the public to “think, assess, evaluate, resolve, inspire, agitate, and through these means, reshape the world” (ibid, p. 1), then we must begin by recognising that the public are at all times actively engaged in the continuous production and reproduction of their social and cultural practices. Yet the freedom and capability that different individuals and groups have in these processes are often limited by political and institutional structures, and aspirations and expectations are often unduly limited:

Sen therefore redefined sustainable development as “*development that promotes the capabilities of present people without compromising capabilities of future generations*” (Sen 2000, p. 5). Sen’s ‘*capability*’ centered approach to sustainable development aims to “*integrate the idea of sustainability with the perspective of freedom, so that we see human beings not merely as creatures who have needs but primarily as people whose freedoms really matter*”. (ibid, p. 6)

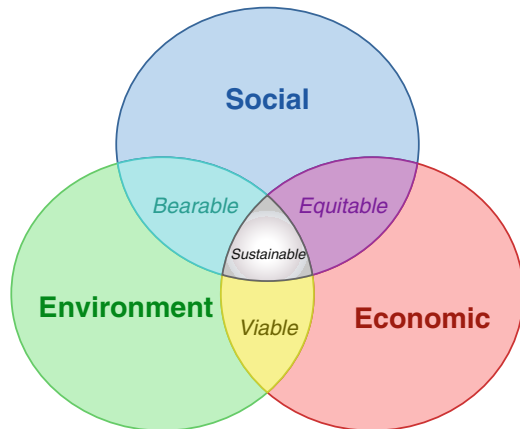
This more educational perspective resonates strongly with the position taken by Schumacher (1999) where he argued,

Development does not start with goods; it starts with people and their education, organization, and discipline. Without these three, all resources remain latent, untapped, potential. (ibid, p. 139)

1.1 Preprimary Curriculum Practice

As Feine (2012) suggests: “...to be truly sustainable, development processes have to take account of, and balance, the mutually interacting and dependent social, economic, environmental and cultural pillars of sustainable development” (see Fig. 1.1 below). In terms of the preprimary curriculum, environmental education has a long history and may be considered fundamental to the established principles of early childhood education identified in the educational writings of Jean-Jacques Rousseau

Fig. 1.1 The three pillars of Education for Sustainable Development



(McCrea 2006), Robert Owen (Siraj-Blatchford 1996) and John Dewey (McCrea 2006). For example, in 1826 Friedrich Froebel wrote:

The pupil will get the clearest insight into the character of things, of nature and surroundings, if he sees and studies them in their natural connection... (Froebel 1826)

At the start of the UNESCO decade for Education for Sustainable Development, environmental education was therefore well developed in early childhood education in many countries. Some significant social and cultural concerns of ESD were also being addressed in early childhood curriculum initiatives concerned with social justice, racial equality and bias (Derman-Sparkes and Olsen Edwards 2010), multicultural and multilingual (Banks and McGee 2009; Siraj-Blatchford and Clarke 2000) and gender education (MacNaughton 2000). The area least developed has been economics. For example, while ‘thrift’ may have been considered an important virtue to be encouraged in children a century ago, in the Western world at least (Tucker 1991), it would seem to have rarely featured in the aims of early childhood education until reintroduced as an aspect of ESD (Siraj-Blatchford et al. 2010).

Yet any awareness of ESD as a distinct area of concern at the start of the decade was extremely limited in ECCE, and now even after 10 years, the subject remains fragmented within and between countries around the world. However there are signs that the subject is building momentum, and we expect the institution of the new UN Sustainable Development Goals will accelerate this process.

Following the Education for Sustainable Development World Conference 2009, the Bonn Declaration, and its elaborated strategy for the second half of the decade, UNESCO has focused its work on three key sustainable development issues to be addressed through education: biodiversity, climate change and disaster risk reduction. Each of these areas is already being addressed in some ECCE settings around the world. The Early Childhood Australia Sustainability Interest Group (Young and Moore 2010) have shared their experience of preprimary ESD practice and recommend a wide range of biodiversity concepts to explore. These include:

- *Decay, scavenging, conservation, protection, hibernation, habitats*
- *Making compost, worm farms and vegetable patches*
- *Life and food cycles*
- *Prey, predators and camouflage*
- *Conducting biodiversity audits of their playspace*
- *Planting a diverse range of plants*
- *Discussing plant and animal conservation*
- *Sponsorship of an endangered or local species*
- *The creation of frog bogs, bird baths and feeders*
- *Playspace design discussions* (Young and Moore 2010)

1.2 ESD Exemplars

In 2012 UNESCO published a report directly focused upon *Education for Sustainable Development Good Practices in Early Childhood*. This was published in response to *numerous requests for case studies and descriptions of good*

practices in ESD (UNESCO 2012, p. 4). The document provides details of 12 programmes promoting ESD in early childhood settings. Four of these projects presented as exemplars were very-large-scale national or regional initiatives: Leuchtpol (Lighthouse), *Ecological Blue Flag*, *Leben gestalten lernen – Werte leben* (Learning to shape life – living values), and *Sustainable Human Development in Rio Santiago*. The first three of these are most significantly concerned with environmental issues and the fourth with social and cultural. The selection of exemplars clearly illustrates the emphasis upon environmental education and the relative underdevelopment of projects focused upon the social and cultural and economic dimensions of ESD. Only three of the exemplars offer more combined and integrated ESD approaches.

A 28 million EURO (2008–2012) German ESD project for 3–6-year-olds, the *Leuchtpol* (Lighthouse) project, was a project focused on *Energy and the Environment* developed by *Arbeitsgemeinschaft Natur- und Umweltbildung Bundesverband* (National Working Group for Nature and Environmental Education), an NGO, and the E.ON energy company. The project is also supported by Leuphana University Lüneburg. The project provided 5-day further training events for preschool teachers aimed to involve 4000 preschools (about 10% of national provision) by the end of 2012. The project also provides a kit of materials, brochures providing examples of good practice and quality standards as well as conferences and exhibitions.

The *Ecological Blue Flag Programme for Educational Centres* was also included in the UNESCO (2012) exemplars of good practice. This exemplar was developed by the Ministry of Public Education, Health and the Environment Education Department in Costa Rica in 2004. The project involved preschools, primary and high schools as well as special education institutions, teacher education and universities. The Programme currently involves 600 educational centres out of a total of 4518 in Costa Rica. A specific goal has been to ‘highlight the importance of protecting natural resources and of promoting healthy practices such as the use of toilets in schools’. The project provides a teacher training programme covering issues concerned with climate change, the Earth Charter, waste management and energy and water resources saving. Preschools are evaluated in order to gain the Blue Flag certification.

A project developed by the Landesbund für Vogelschutz in Bayern, Germany, in association with the Bavarian Ministry for Environment and Health, *Leben gestalten lernen – Werte leben* (Learning to shape life – living values) has provided ESD materials (DVD and ring binder) to more than 3000 kindergartens in Germany and has certified the practices of 280. The overall aims of the project have been to involve families together with their children, educators and foster values appropriate to ESD such as a sense of responsibility, openness, trust and confidence and respect for the environment.

Sustainable Human Development in Rio Santiago is a project that has been developed in Peru and Ecuador to ensure that the human rights of indigenous children are protected throughout the Amazon region. The project addresses children’s right to a good start in life, to a name and a nationality, to health and to quality basic education. More than 1200 children under the age of six and their families benefit

from the project, which provides support for child-mother health services and provisions that include the training of teachers for community-based family and children's education.

As previously suggested, there are various other *Green School* initiatives around the world that provide curriculum support for ESD as well as structural support for the development of sustainable school buildings, etc. Many of these initiatives involve young children and are funded partly by industrial sponsors. In the Philippines, for example, the *Green Schools* programme is a partnership programme with the Department of Education, Commission on Higher Education and private sector partners such as Smart Communications, Inc., Nestle Philippines, Inc., Petron Foundation, Inc., One Meralco Foundation, Inc. and Unilever Philippines. In the *UNESCO Asia-pacific Regional Consultation on a Post-DESD Framework*, Shaeffer (2013, p. 3) also recommends the Indonesian *Green schools* (or ecofriendly and safe schools) initiative as worthy of scaling up. *Eco-Schools*¹ are part of an international programme for environmental management, certification and sustainable development education for schools. The focus is on early years of education, and it is free for settings to join up and apply for a reward. The organisation provides a range of case studies of good practice, resources to support teaching and a range of advice on writing eco-policies and carrying out an environmental review. In Australia the *Environmental Education in Early Childhood (EEEC)* project aims to promote a holistic approach to environmental education and sustainable practices in early childhood and the early years of primary school. The approach involves policy development, housekeeping practices, play and learning experiences and strategies for working with children, staff and parents. There are also many other national and regional early childhood environmental education networks.

Green Kindergartens was an 18-month pilot project that was also identified as an exemplar by UNESCO (2012). The project is run in four kindergartens in Vanuatu. This project was supported by *Live and Learn Environmental Education*² and the *Vanuatu Early Childhood Association*. Workshops were provided to train 26 teachers to provide environmental education for young children in close collaboration with the parents of the children. Activities in the pilot were concerned with waste and gardening and a handbook and posters were produced to support integrated project work.

The UNESCO (2012) examples also include the exemplary case of the South African *Raglan Road Community Centre* established in 2004 as an integrated community service centre. This is the third integrated ESD ECCE project identified. The centre creates socio-environmental safety nets for early childhood addressing issues including child abuse, HIV/AIDS, poverty and nutrition in addition to education. Activities are targeted at both children and their primary and secondary caregivers as well as at the broader social network surrounding them. Math, computer and literacy classes have been established so that caregivers can assist learners to develop reading and math skills and to enable the adults to access a broader spec-

¹<http://www.eco-schools.org.uk>

²<http://www.livelearn.org>

trum of employment opportunities. To help the physical development of the children, meals are provided as part of the school day and to enable a sustainable nutritious and healthy diet (beyond the limited bread allowance allocated by the Department of Education), a food garden has also been established on the school grounds. The food garden was then used as a learning resource for the learners and to provide a 'resource income' to members of the community, who worked in the garden in exchange for a portion of the yield. With financial resources being a challenge in the local health clinic, the centre has drawn upon indigenous community knowledge in developing a herb garden producing traditional medicines.

A project from an Ecole maternelle in Paris involved three-classroom groups of 88, 4–6-year-olds in the production of short animated films using webcams in association with the Playmobil toy company. The project *Comment ça va ... la Terre?* (How are you Earth?) involved both the children and their parents in learning about sustainable development and campaigning for 'eco-citizenship'.

The *Eco-Patrolha* project involved a class of 3- and 4-year-olds and their parents in Porto in Portugal focused on the education of socially active citizens. The children participated in a variety of ESD activities associated with the care of plants, recycling, the reduction of waste, water and energy consumption and the offsetting of CO₂ emissions. The children also collaborated in the development of lists of environmentally appropriate and inappropriate behaviours – and 'patrolled' the pre-school (and local community) to ensure that they were adhered to "...the children feel like "superheroes" with a big responsibility, that of helping "to save the planet", as they themselves put it" (UNESCO 2012, p.33). This led to the development of recycling activities, energy savings and the implementation of an organic garden.

A kindergarten project, *Pupeñi*, is located in La Pintana, Chile, and aims to contribute to minimising global warming through an efficient use of energy, promoting water and electricity consumption reduction in the households. The Project was developed jointly by the teachers' council and the Centre of Parents and Representatives of the *Pupeñi* kindergarten. The project has provided participatory workshops and awareness raising campaigns on the appropriate use of energy and energy efficiency. They provided training programmes to promote the use of *ollas brujas* (a kind of thermos or pot made of expanded polystyrene) as an alternative to gas cookers.

In a survey of 212 stakeholders in 33 European countries, the GHK in association with Danish Technology Institute and Technopolis (2008) identified one out of 30 'innovative' projects, involving children under the age of 8. This was an Austrian national network (OKOLOG) project for schools involving 6–25-year-olds. It is significant that the future of many of the exemplary projects and programmes identified in UNESCO (2012) is dependent on continuation of targeted ESD funding and in many countries around the world recession has resulted in reduced expenditure for ESD (UNESCO 2010).

1.3 Looking at ESD Curriculum Globally

An opportunity sample survey of provisions for ESD in ECCE was carried out by Siraj-Blatchford and Samuelsson (2013) with expert respondents from 14 countries, China, Czech Republic, Finland, Russia, Slovakia, France, Ireland, Australia, Brazil, Bulgaria, Sweden, the UK and Kenya.

Various kinds of ‘environmental’ preschool programmes were found to be common in all these countries apart from Kenya, and in most countries associated, seminars, workshops and material have been provided for some years. In some of the countries, aspects of ESD are also incorporated into the national curriculum for early childhood. Respondents were asked about the relative contributions made to the development of ESD in ECCE by national government, the early childhood profession and the local community since 2005. In Finland much has been achieved. The Finnish National Board of Education has *Strategy for Education and Training for Sustainable Development and Implementation Plan 2006–2014*. The strategy contains plans for increasing cooperation and promoting networking at the local, regional and national level. The French and Slovakian governments had also been influential. But most of our expert informants felt that little had been initiated by their relevant government ministries. By far the greatest influence has come from the profession itself who were inspired and supported in this work by international professional initiatives by OMEP and UNESCO. In many countries this work was also significantly supported by ECCE specialists in the University sector.

In Singapore ‘environmental awareness’ was introduced into the national curriculum for preschools in 2006 and was changed to ‘Discovery of the World’ in 2012. These aspects include some environmental activities and activities to understand the social and physical world. In Russia new standards have been introduced, and there has been greater recognition of the need to ensure equality of access to ECCE and of the importance of increasing quality of education as a national priority in preschool education. There has also been a project, *Nature and Us*, which has been dedicated to the Decade of ESD, as a follow-up of the UNESCO world conference on ECCE in 2011. Ecological education has also been introduced into the curriculum for students and teachers in some universities and colleges. The progress being made in Russia is confirmed in a response to the second DESD survey of Member States, Key Stakeholders and UN Agencies carried out by UNESCO (2014, p. 30).

An article by Ärlemalm-Hagsér and Davis (2014) identifies the different ways that young children are described and supported as active participants for change within the Australian and Swedish national steering documents for early childhood education. In both countries environmental education is strongly emphasised in the early years. Concepts concerned with ‘critical thinking’, and of ‘children as active participants for change’, were used as specific dimensions of curriculum interpretation in the study. The analyses show that, while both the Australian and Swedish curricula deal with content connected to the environmental, social inclusion and critical thinking dimensions, there is limited or no discussion in the Australian cur-

riculum of the 'political' dimensions of human development, such as children being active citizens with political agency.

In *Finland* there is a coordinated strategy and plans for increasing cooperation and promoting networking at the local, regional, national and international level. Also projects about urban living for sustainability exist and a practical guide has been developed to provide a step-by-step model in creating sustainable development programmes in a school or kindergarten. In *Bulgaria* 100 % of children receiving preprimary education are considered to be involved in environmental education as all the kindergartens and preparatory groups at school observe the educational requirements for preschool education. And *Korea* and *Norway* also have an ECCE curriculum that gives strong support to ESD.

By way of contrast, we might consider the case of *Kenya* where the national curriculum guidance includes some activities related to water, health, hygiene and the environment, and these are applied in most of the schools where there are trained teachers. But the majority of the current preprimary teaching workforce have not been trained and will not have been influenced significantly by this. Preprimary teacher salaries in *Kenya* are typically between £16 and £30 a month (2000–4000 Ksh), and the staff turnover in preprimary sector has been estimated as 40 % annually. In any event, 65 % of *Kenyan* children aged 3–6 years have no access to preprimary ECCE services, and in arid and semiarid areas, only 9 % have access. It is also significant from a sustainability perspective that as many as 122,000 under 5-year-olds die each year, mostly due to lack of water, sanitation and hygiene facilities. It has been estimated that as many as 75 % of children are unable to wash their hands with soap or ash after visiting the latrine and before eating.

The most highly regarded ECCE ESD work being carried out around the world involves thematic and holistic project activities that aim to find balanced solutions to problems that consider each of the relevant economic, environmental and socio-cultural dimensions. But there are clearly specific foundational attitudes, skills and knowledge that are associated with each of the pillars (e.g. thrift, care for the environment, empathy), and for the purposes of evaluation (or auditing) current practice, it is useful to consider the extent to which each of these pillars is addressed. In our opportunity survey we found that the number of preschools incorporating Environmental education as one aspect of ESD varied in the different countries from 25 to 100 %. In terms of social education, the variation was considered to be from 25 to 75 % and perceived coverage of economic issues even lower. We also asked our experts about the degree to which children were currently participating in the development of their ESD curriculum activities, and we were told the variation was between 25 and 50 % of preprimary schools in each of the countries.

Research (Chawla 2006; Ewert et al. 2005) shows that the single most important influence in promoting environmental awareness and concern is identified as childhood experience 'outdoors', and early years practitioners have long recognised the learning potential of the outdoor learning environment. Outdoor education in *Scandinavia* has a particularly high status, with the aim of improving physical development and the child's connection with nature. Many of the *Scandinavian* pre-schools are built and run in secluded woodland, and the idea of developing 'Forest