

Education for Sustainable Development in Small Island Developing States

Commonwealth Secretariat



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Matthew Hiebert



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Published by the Commonwealth Secretariat
Edited by editors4changeLtd
Typeset by Techset Composition
Cover design by Rory Seaford Design
Printed by Charlesworth Press

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Publications Section
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Email: publications@commonwealth.int
Web: www.thecommonwealth.org/publications

A catalogue record for this publication is available from the British Library.

ISBN (paperback): 978-1-84929-090-6
ISBN (e-book): 978-1-84859-146-2

Foreword

At the 17th Conference of Commonwealth Education Ministers in 2009, the Commonwealth Secretariat was asked 'to prioritise the work to take account of global trends', including 'Education for sustainable development, with particular emphasis on climate change'. Similarly, the Commonwealth Eminent Persons Group identified climate change as a key priority for action by the Commonwealth in its recommendations presented to Commonwealth Heads of Government in 2011.

The Commonwealth's focus on climate change is not coincidental. Of its 54 members, 32 are considered small states – countries with a population of 1.5 million or less, or, like Jamaica and Papua New Guinea, countries which share many of the characteristics of small states.

Small developing states in the Caribbean Sea, the Indian Ocean and the Pacific Ocean, a significant number of which are Commonwealth member countries, represent some of the most vulnerable countries with regard to climate change. They are already confronted with its effects, including rising sea levels, increasing drought and the increase in frequency and intensity of tropical cyclones or hurricanes. While current and forthcoming impacts of climate change on agriculture, fisheries, forestry, tourism and trade put their populations in danger, these states continue to have low adaptive capacity to climate change. Consequently the need to accelerate and deepen understanding and action on the environment is particularly pressing in these states.

Education for sustainable development (ESD) is an essential element of the global response to environmental challenges. ESD helps learners of all ages, especially young people, understand and address the impact of global warming, highlights and encourages changes in attitudes and behaviour to help mitigate evolving environmental concerns, and gives them the knowledge and skills necessary for them to adapt to that change. In particular, education of girls and women has a remarkable impact on the capacity of communities to better manage their livelihood practices and adapt to environmental change. While education can help address the root causes of environmental degradation in all countries by promoting sustainable lifestyles and development, the adaptation capacities of affected communities can be further enhanced by education programmes that explicitly prepare for disasters and promote indigenous knowledge.

This study identifies good practices in ESD, analysing the factors underlying their success and how they can be adapted to other contexts. The study also assists in understanding where shortfalls in ESD implementation lie, how these come about, and to learn from and apply the educational initiatives which have been shown to work, so filling in the gaps. The study will enable policy-makers and practitioners

to revitalise the delivery of ESD by revisiting the policies and support frameworks necessary to implement it successfully. It is hoped that the impact of the study will thus be felt from both ‘top-down’ and ‘bottom-up’ perspectives – and thereby contribute towards bridging the gap between policy and practice.

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Acknowledgments

This report has been prepared under the auspices of a Commonwealth Secretariat initiative to support the advancement of education for sustainable development, with a particular focus on the interests of small island developing states. The author is grateful to have had the opportunity to contribute to this important agenda, and would like to express sincere thanks to all of the individuals and organisations who have contributed to this research, especially those in the ministries of education who responded to my requests for information. These contributions have been made both directly, through phone calls and correspondence, and indirectly, by making reports and presentations available online for public consumption. A list of those who have contributed directly to the study is included by name in Appendix B, and the lengthy list of documents which generous individuals and organisations have made available is included in the references. There are also a number of key individuals whose indirect support was invaluable, as they provided additional contacts and leads to follow up with. These individuals reflect the spirit of collaboration and sharing which is so important to our common future. In addition to those individuals named in the appendices, the author would also like to thank Jonathan Penson of the Commonwealth Secretariat for his technical guidance in the framing of this study and his support in liaising with the governments of the focus countries, as well as Kari Donovan and Shannon Bow of Agriteam Canada for their administrative support.

The Commonwealth Secretariat gratefully acknowledges the reviewers of the draft of the report, who made their considerable expertise available at very short notice but who nonetheless provided such astute and considered comments. They are Dr Paulette Bynoe, Omar Mohammed, Dr Suzana Russell and Dr Rachael Williams.

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Abbreviations and acronyms

ACCU-UNESCO	Asia-Pacific Cultural Centre for UNESCO
AIMS	Africa, Indian Ocean and Mediterranean and South China Seas
AOSIS	Alliance of Small Island States
ASPnet	Associated Schools Project Network
BPOA	Barbados Programme of Action
CARICOM	Caribbean Community
CIDA	Canadian International Development Agency
CoE	Centre of Excellence
CSFT	Civil Society Forum of Tonga
CSO	Civil Society Organisation
CSR	Corporate Social Responsibility
CXC	Caribbean Examinations Council
ECE	Early Childhood Education
ECHO	Environmental Community Health Organization
EDC	Education Development Centre
EESD	Environmental Education for Sustainable Development
EFA	Education for All
ENACT	Environmental Action Programme
EPA	Environmental Protection Agency
ESD	Education for Sustainable Development
GLISPA	Global Islands Partnership
GUPES	Global University Partnership on Environment and Sustainability
HDI	Human Development Index
IAGs	Internationally Agreed Goals
IALEI	International Alliance of Leading Education Institutes
IBE	International Bureau for Education

IIC	Iwokrama International Centre for Rainforest Conservation and Development
IoE	Institute of Education
ISD	Institute for Sustainable Development
JBTE	Joint Board of Teacher Education
JET	Jamaica Environmental Trust
K-12	Kindergarten to grade 12
KSAs	Knowledge, Skills and Attitudes
LCDS	Low Carbon Development Strategy
LLEE	Live & Learn Environmental Education
MAST	Monitoring the environment, Analysing the results, Sharing the results and findings
MDGs	Millennium Development Goals
MESA	Mainstreaming Environment and Sustainability in Africa
MESCA	Mainstreaming Environment and Sustainability in the Caribbean Universities
MID	Maurice Ile Durable
MIND	Management Institute for National Development
MoE	Ministry of Education
MoEHR	Ministry of Education and Human Resources
MoEnSD	Ministry of Environment and Sustainable Development
MoESC	Ministry of Education, Sports and Culture
MoEWAC	Ministry of Education, Women's Affairs and Culture
MoEYC	Ministry of Education, Youth and Culture
MoNRE	Ministry of Natural Resources and the Environment
MoTEYS	Ministry of Training, Employment, Youth and Sport
NEEC	National Environmental Education Committee
NEPA	National Environmental Protection Agency
NGOs	Non-Governmental Organisations
NISD	Network of Institutes for Sustainable Development
NIU	Network of Island Universities
OECS	Organisation of Eastern Caribbean States
PACE-SD	Pacific Centre for Environment and Sustainable Development

PATVET	Pacific Association of Technical and Vocational Education and Training
PLCs	Professional Learning Communities
PNG	Papua New Guinea
PRIDE	Pacific Regional Initiatives for the Delivery of basic Education
RCE	Regional Centre of Expertise
SPC	Secretariat of the Pacific Community
SEP	School Environment Programme
SIDS	Small Island Developing States
SLEP	Sustainable Livelihood and Education in the Pacific
SLIC	Sustainable Living Initiative Centre
SoE	School of Education
SPREP	Secretariat of the Pacific Regional Environmental Programme
STEEP	Sustainable Teacher Environmental Education Programme
TESP	Tonga Education Sector Programme
TVET	Technical and Vocational Education and Training
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCSD	United Nations Conference on Sustainable Development
UCSIS	University Consortium of Small Island States
UNDESD	United Nations Decade of Education for Sustainable Development
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEP	United Nations Environment Programme
UNEVOC	International Centre for Technical and Vocational Education and Training
UNGA	United Nations General Assembly
UNICEF	United Nations Children's Fund
UNLD	United Nations Literacy Decade
UNU	United Nations University
USP	University of the South Pacific
UWI	University of the West Indies
WG5	Working Group 5 OECS

Chapter 1

Introduction

1.1 Background

Education is critical to sustainable development, and is an essential element of the global response to environmental challenges such as climate change. Sustainable development can be understood as ‘development that meets the needs of the present without compromising the ability of future generations to meet their own needs’ (World Commission on Environment and Development 1987). Contemporary perspectives on sustainable development hold that sustainability is not simply a matter of technological innovation, but rather that, in addition to technological innovations, societies themselves must develop, focusing attention on the cultural, psychological and behavioural aspects of societies which lead them to continually push ecological limits (Ayres et al. 1998). This perspective is reflected in touchstone documents of the global education for sustainable development (ESD) movement, including the Earth Charter (Earth Charter Commission 2000) and the Bonn Declaration (UNESCO World Conference on Education for Sustainable Development 2009). With the United Nations Decade for ESD (UNDESD), 2005–2014, now in its final years, implementation of ESD in many countries has progressed relatively slowly, demonstrating at best mixed results.

Over the next few years, a number of global initiatives and internationally agreed goals (IAGs) in education will be coming to a close. These include not only the UNDESD, but also Education for All (EFA), the Millennium Development Goals (MDGs) and the United Nations Literacy Decade, among a great many related regional agreements. Research on the implementation of activities within each of these initiatives, as well as country-level education sector reform programmes which tie into them, will help to contribute meaningful information for the formulation of the successors to these IAGs. The recent UN Conference on Sustainable Development outlined a process for the development of internationally agreed ‘sustainable development goals’ (UNCSD 2012). Small island developing states (SIDS) have a unique context and vulnerability with regard to sustainability issues, especially to climate change. As such, many SIDS have been working concertedly to reorient education to better support sustainable development and adaptive capacity. Therefore, there are important lessons to be learned from the ESD work being done in the SIDS community, which should help to inform ESD activities in other countries, as well as the formulation of the next round of IAGs in education.

1.2 Aims and objectives

The overall aim of the study is to identify gaps, shortcomings and best practices in the delivery of ESD, with an emphasis on climate change education, and to use the

findings to produce practical and realistic recommendations on how ESD may be better integrated in education policy and strategy, and delivered more comprehensively.

The specific objectives of the review are:

- To identify and analyse gaps in ESD provision in ten sample countries;
- The identification, collation and analysis of good practice in ESD in these countries; and
- To synthesise the findings to make recommendations for filling gaps and for adapting successful practices in a culturally relevant and practical way.

1.3 Summary

This desk-based review of ESD in SIDS explores good practices as well as gaps in ESD implementation, generalising from the available information from ten countries representing the Caribbean region (Dominica, Guyana and Jamaica), the Africa, Indian Ocean and Mediterranean and South China Seas (AIMS) region (Maldives and Mauritius), and the Pacific region (Nauru, Papua New Guinea, Samoa, Solomon Islands and Tonga). These countries are home to some of the planet's great stores of biodiversity and endemic species, as well as invaluable cultural heritage and diversity. The effects of global climate change are also likely to be felt more rapidly and more intensely in these regions than in some others. As such, ESD has been identified as a priority for SIDS and donor countries, not only in the context of the United Nations Decade of Education for Sustainable Development (UNDESD), but also in light of the specific context and vulnerabilities of SIDS related to climate change.

Building on the broader concept of sustainable development, which balances social, environmental and economic considerations with an emphasis on lasting quality of life, ESD can be understood as a transformative approach to education that aims to foster a transition towards sustainability. ESD, therefore, consists not only of relevant and necessary content, but also emphasises pedagogical approaches and educative experiences that contribute to the development of learners as citizens who think and act in sustainable ways. This review explores three dimensions of ESD implementation: the availability of ESD opportunities (access); the quality of ESD initiatives; and the management and co-ordination of implementation. A summary of findings is presented below.

1.3.1 Access and coverage

Good Practices	Gaps
Using broader education system reforms to lay an institutional foundation and create entry points for education for sustainable development (ESD).	Despite the presence of some supportive policies, ESD is not consistently making it into schools in a systematic or comprehensive manner.

Giving students real experiences with nature, sustainability and caring for their environments.	Technical and vocational education and training (TVET) programmes and structures oriented towards sustainability.
Development of specialised post-secondary programmes in priority areas for sustainability.	The implementation gap – putting training into practice.
Assessing ESD in post-secondary institutions beyond the programme level.	Establishment of ESD-oriented 'learning community' mechanisms.
Incorporating ESD into research and scholarship in post-secondary institutions.	Targeting school leaders as key change agents in school-based ESD.
Increased focus on ESD in teacher education institutes.	Systematic approaches to community-based ESD.
Localised, focused, curriculum-linked teacher training accompanied by resource materials.	Leveraging the potential of mass media as a medium for ESD.
Bridging school-based ESD with community life.	
Providing a progression of learning opportunities in local natural environments.	
Provision of topical ESD opportunities at the community level.	
Collaboration between ministries of education and mass media outlets.	
Building institutional capacity for sustainable development – ESD for governments.	

Ways forward

Focus on reorientation rather than adding on or adding new.

Strategic work in the kindergarten to grade 12 (K-12) system focusing on key drivers and constraints.

Increase attention to lagging areas such as TVET and mass media roles in ESD.

Increase research activity and the sharing of research on ESD.

1.3.2 Quality and rigour

Good Practices	Gaps
Developing authentic and locally-relevant conceptualisations of sustainability and ESD.	There is a need for a stronger and more coherent formulation of what students should be learning.
Teaching sustainability by practising sustainability.	Prevailing lack of clarity around how to 'do' ESD and slow proliferation of whole school approaches.
Increasing emphasis on the role of physical environments in learning.	Many of the available ESD resource materials not being used in classrooms.
Recognising the importance of language in ESD.	Lack of standards and general policy coherence around ESD.
Building ESD out from the core of local culture.	Lack of time and other resources to focus on ESD despite prioritisation in principle.
	Emphasis on issues related to social justice, gender equality, or the rights of marginalised groups.

Ways forward

Leveraging reform activities to embed ESD more deeply at the policy level.

Review the operationalisation of ESD in local policies and practices to ensure they remain relevant, comprehensive and balanced.

Development of standards which strongly incorporate ESD, and outline expected practices in all areas of the education system.

Development of practical models and examples of ESD.

Increased focus on students' immersive experiences.

1.3.3 System management

Good Practices

Documentation and participation in ESD activities at the regional level.

Balancing regional funding with country-level interventions.

Strong national policies supporting sustainable development being translated into institutionally-grounded changes in the education sector.

Engagement and ownership of local experts and involvement of end-users.

Interministerial and interdepartmental collaboration guided by higher-level ESD strategies and frameworks.

Gaps

Lack of effective regional co-ordination on ESD implementation.

Need for more strategic and streamlined approaches to regional planning.

The implementation gap – translating policy into practice.

Co-ordination mechanisms and multi-stakeholder processes to guide on-the-ground implementation.

Formalised co-operation between governmental and civil society organisations.

Lack of consistency and continuity in leadership and co-ordination.

Ways forward

Development of an integrated global framework of educational priorities which includes ESD at its core.

Streamlining of policy and planning environment under the banner of ESD.

Current and comprehensive sector mapping around ESD to support better co-ordination and partnership.

Establishment of clear co-ordinating mechanisms and accountabilities for ESD at the national level.

Results-oriented ESD reporting.

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Chapter 2

Context

2.1 Global context of education for sustainable development

While approaches to development which recognise natural limits and shared contexts of global development have been increasing in profile since at least the 1980s, it was the call of the United Nations General Assembly for a Decade of Education for Sustainable Development (UNDESD) 2005–2014 which brought ESD onto the global agenda. The four objectives of the UNDESD (UNESCO 2005) were as follows:

- Facilitating networking and collaboration amongst stakeholders on ESD;
- Fostering greater quality of teaching and learning of environmental topics;
- Supporting countries in achieving the MDGs through ESD efforts;
- Providing countries with new opportunities and tools to reform education.

The UNDESD was presented alongside other global agendas and internationally agreed goals (IAGs) including the Millennium Development Goals (MDGs), Education for All (EFA) and the United Nations Literacy Decade (UNLD), as being complementary, with its focus on sustainability not as additional content, but as an approach to the purpose of education which cuts across all subjects (UNESCO 2005b). The implied approach was not to place an additional burden on education systems struggling to achieve universal access targets or basic quality indicators, but rather to reorient underlying assumptions which have guided education over decades of industrialisation and economically-oriented development. The UNDESD aimed to address a necessary shift in lifestyles, values and behaviours. In order to accomplish this, the UNDESD and related literature advocated reorientation and invigoration of both formal and non-formal education, as well as other aspects of education systems including higher education, technical and vocational education and training (TVET) and teacher education/training.

Reports on the progress of the UNDESD, and ESD implementation more generally, have tended to suggest that while the concept of ESD has gained profile and importance since the launch of the decade, more work needs to be done to support and strengthen actual ESD implementation (IALEI 2009; UNESCO 2009), and that more research is necessary to systematically identify success factors and effective approaches to ESD (Collins-Figueroa et al. 2005; IALEI 2009). While a broad range of success stories and effective practices have been documented (see for example UNESCO 2007a; 2007b), monitoring reports often point to areas which remain problematic in ESD implementation, such as continued ambiguity around the term 'ESD' itself and what it means in practice (UNESCO 2009).

At the 2009 Conference of Commonwealth Education Ministers, ministers requested the Commonwealth Secretariat to prioritise work in the education sector that takes into account global trends, including ESD, with a particular emphasis on climate change. ESD and climate change were accordingly incorporated into the Commonwealth Secretariat's 2010–2012 Education Strategic Plan, including an activity to assess the current situation at the country level and provide strategies in education that would help to support their climate change agenda.

Small island developing states are some of the most vulnerable countries with regard to the impacts of climate change. Many SIDS are already being confronted with effects ranging from rising sea levels and loss of land in coastal areas to increased frequency and intensity of tropical storms. Local livelihoods in many SIDS are also being threatened as the climate change and non-sustainable development models jeopardise fisheries, agriculture, tourism and other industries. Consequently, there is a need to accelerate ESD implementation in SIDS in order to enhance adaptive capacity to climate change, and strengthen social and economic commitments to sustainability (University of Mauritius 2009; UNDP 2005).

2.2 Context of ESD implementation in SIDS

2.2.1 Educational profiles of small island developing states

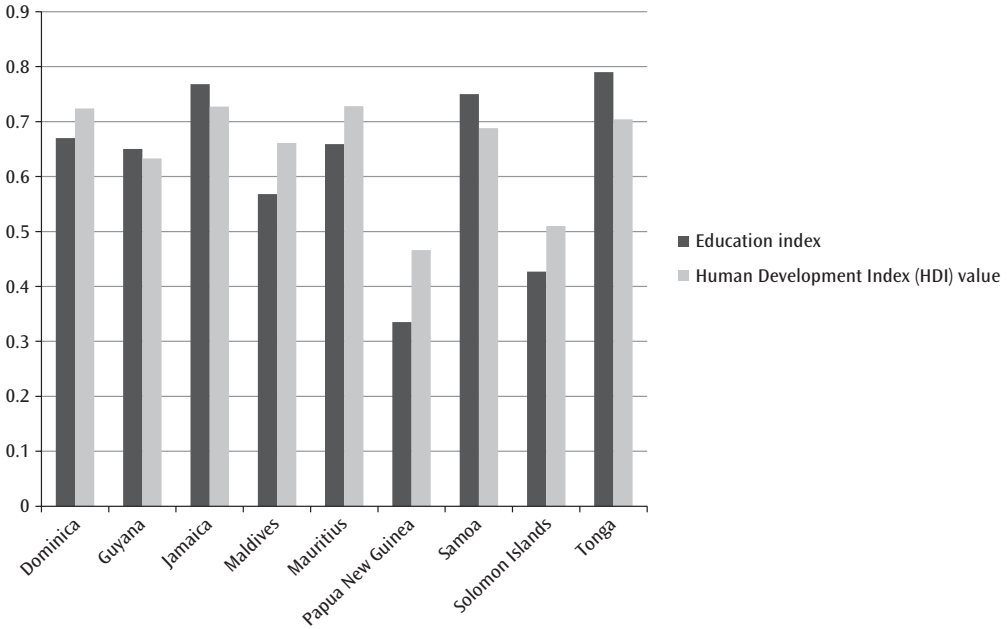
While the focus countries of this study vary widely in their socio-economic context, geography and culture, as well as their educational profiles, there are a number of commonalities related to their education and development context. Speaking generally, the focus countries share concerns with reaching universal access and literacy targets, and hence enrolment and completion rates. In addition, most face significant challenges with respect to sovereign financing of their education systems – with many being reliant on foreign aid. At the ground level, needs range from physical adequacy of buildings to availability of basic teaching and learning resources to qualified personnel and updating of curricula. Schools are often under-resourced, even in urban areas, and rely on outdated materials and minimally or untrained staff. However, there are examples of outstanding, well-resourced schools within the focus countries, with competent staff and good leadership. In most cases, these remain an exception to the norm.

Figure 2.1 below provides a comparative illustration of 2011 United Nations Development Programme (UNDP) Human Development Index (HDI) and Education Index data (UNDP 2012) for nine of the ten focus countries¹ for this study. HDI data is not available for the tenth country, Nauru. The variation between countries is evident, with most falling in the range from moderately low to moderately high on both indexes. Both indices are scored on a scale from zero to one.

2.2.2 Policy context of small island developing states

Over the last two decades, increasing attention has been paid to the specific vulnerabilities of SIDS in the face of issues related to climate change and disaster risk.

Figure 2.1 Education and development context of focus countries



An important series of policy developments was triggered by the 1992 United Nations Conference on Environment and Development (also known as the Earth Summit), at which 179 governments voted to adopt the Agenda 21 policy document. Chapter 17, section G of Agenda 21 notes that ‘small island developing states are a special case both for environment and development ... [and] are considered extremely vulnerable to global warming and sea level rise’ (UNCED 1992). The following year the United Nations General Assembly passed Resolution 47/189, which called for the convening of a global conference on sustainable development in small island states (UNGA 1993). This conference, held the following year in Barbados, was the first Global Conference on the Sustainable Development of Small Island States.

The Barbados conference culminated in the development of a pivotal policy document, the United Nations Programme of Action on the Sustainable Development of Small Island Developing States, more commonly known as the Barbados Programme of Action (BPOA). The BPOA outlines a comprehensive yet integrated approach to addressing the social, environmental and social development vulnerabilities of SIDS (UNGA 1993). Ten years after Resolution 47/189, UNGA passed Resolution 58/213 to convene an international meeting to review the BPOA implementation. The conference was hosted by Mauritius, and led to the development of the Mauritius Strategy for the further Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States. The Mauritius Strategy was subsequently endorsed by UNGA Resolution 60/194, giving the strategy a high stature as the UN’s primary guiding document for support to SIDS, and as ‘the only global strategy to address specifically and exclusively the problems of island states’ (UNDP 2005: 1).

Both the BPOA and the Mauritius strategy articulate the concerns of SIDS related to sustainable development, climate change and disaster risk preparation, as well as other aspects of global concern such as biodiversity and the preservation of unique habitat areas. Building on the foundation of these global agreements, a number of regional agreements have been established in the Caribbean, Pacific and AIMS regions, including overarching documents like the Pacific Plan, and sector-specific commitments such as the Tortola Declaration on Climate Change Education for Sustainable Development in the Caribbean. Some of the specifics of these policies and their implementation are discussed further in the findings of this report.

2.3 Operationalising ESD

ESD can be understood as having evolved alongside concepts such as sustainable development, which recognise the interlinkages between issues of social, environmental and economic importance. While ESD shares some commonalities with narrower approaches, for example environmental education and global education, it is distinctive in its holistic and interdisciplinary nature, as well as its emphasis on leading social change towards sustainability, and hence its emphasis on helping students to adopt sustainable behaviours and perspectives rather than simply learning about relevant issues. Despite a broad recognition of the term ESD, and progress in its advancement around the world, there remain ambiguities in what the term means in practice. Because good ESD is closely related to contemporary thinking on what constitutes ‘good education’ more generally, because of the importance placed on locally relevant practices, and because of the breadth of issues within the scope of sustainable development, there is a risk of dilution in which almost any educational act could be considered ESD. This issue is compounded by the breadth of scope that ideas around sustainable development tend to entail, covering themes and issues ranging from environmental protection to economic development, to social and cultural considerations.

Rather than restricting the scope of ESD to a fixed set of parameters, most work has instead focused on highlighted key areas of relevance to ESD that collectively serve to guide the discussion (IALEI 2009; UNESCO 2009). In operationalising ESD, it is important to remember that it is not a static concept, but is steadily evolving in sophistication along with the cultures in which it is practised (UNESCO 2012).

‘Initially, we thought that ESD was a new programme being introduced and we panicked and worried about its development, implementation and keeping abreast with the rest of the world. As we got more and more involved in the understanding of ESD, we realised that it was not a new programme, but an umbrella for any type of education that uses and applies sustainable development approaches, these types of education and approaches already exist in diversity in government Ministries and NGOs. The process also made us aware of the pivotal need to know what programmes/ projects/ initiatives are being implemented nationally (by ministries) and locally (by NGOs, villages, etc.) and through joint ventures to be able to assess the level of our involvement, success and achievement.’ (MoE representative from one focus country)

2.3.1 What gets taught?

While ESD does not focus merely on knowledge acquisition (McKeown and Hopkins 2007; Sterling 2001; UNESCO 2005), there is nonetheless a loosely-defined body of content that has come to be associated with ESD. Most prominent is a focus on the environmental perspectives, with reference to key issues such as climate change, biodiversity and disaster prevention. Socio-cultural issues related to traditional cultures, values, equity, peace and human rights are also prominent. Economic issues also factor in to a lesser extent, such as poverty reduction, livelihoods and corporate responsibility. However, most ESD literature also stresses the importance of relevant skills, values and perspectives, including critical and reflective thinking, problem-solving, values clarification, viewing issues through different perspectives, as well as systems thinking. Guiding literature for the UNDESD, such as the International Implementation Scheme (UNESCO 2005) identifies important content themes in ESD, but places the emphasis on promoting ‘... a set of values, relational processes and behavioural outcomes, which should characterise learning in all circumstances’ (p.9). As such, while ‘content’ in the conventional sense of knowledge and skills is duly recognised, a relatively heavy emphasis is placed on the development of students’ deeper attributes.

Part of the reason why ESD is not more clearly defined is that there is an understanding that what is considered ‘good ESD’ needs to be locally defined and determined, based on the unique backgrounds, context and issues of different localities. While environmental sustainability is a common theme throughout, relevance is an important determinant of good ESD, which has led to different elements being emphasised in different regions:

- Asia–Pacific: knowledge systems, cultural contexts, climate change;
- Latin America and the Caribbean: literacy, environment, habitats;
- The Arab States: desertification, sustainable consumption;
- Sub-Saharan Africa: poverty alleviation, partnerships, food security;
- Europe and North America: sustainable consumption; diversity; natural resources.
(Adapted from UNESCO IBE 2009)

2.3.2 What to look for

Outside of various content emphases, it can be difficult to identify distinguishing characteristics of ESD. In general, good ESD *builds on* the practices of good education. The literature advocates a shift towards student-centred active learning approaches which engage students in participatory activities in relation to the relevant content, including such approaches as: student-led inquiry; cross-disciplinary project-based rich tasks; problem-solving and perspective shifting activities; discussion; reflection on values; and other participatory approaches (UNESCO IBE 2009; UNESCO 2010). The emphasis on student activity is intended to connect students’ learning of content with sustainable behaviours and an active orientation in relation to relevant issues.

Thus, while ‘good pedagogy’ in general does not necessarily mean that ESD is being practised, one would expect to see good pedagogy in classrooms where ESD is being implemented.

In recent years, a number of reports have highlighted the value of more comprehensive and ambitious ‘whole school approaches’ to ESD (IALEI 2009; Henderson and Tilbury 2004). Whole school approaches to ESD incorporate principles of sustainability and student participation into aspects of school governance and care, as well as implementing school-wide policies and programmes that help students to adopt sustainable behaviour patterns and mind-sets. In short, the aim of ESD is to go beyond teaching ‘about’ these sustainability or related issues, to teaching ‘for’ sustainability and immersing students in a context that supports deep learning and direct experiences in working with the related issues.

2.3.3 Where to look

It has been convincingly established that all education has a political quality to it (Apple 2003; Freire 1985; Shor 1992), and by the same measure, it has more recently been suggested that all education is environmental education (Orr 2004). This is to say that through what is taught or not taught, what is prioritised, how messages are conveyed and how ideas are organised, students (often unknowingly) come to internalise certain political and environmental perspectives, as well as assumptions about their relationship to the relevant issues. This forms the foundation for values as well as political and environmental activities. This same logic applies to sustainability, meaning that all learning is in some way connected to the development (or not) of citizens who think and act (or don’t) in the interests of sustainability.

A natural starting point to look for ESD is in formal educational institutions; K-12 schools and higher education institutes, as well as early childhood education programmes, internship programmes and other somewhat formal sites. A great deal of ESD also takes place in non-formal education, through advocacy and outreach work of civil society organisations, or through community-based activities of other educational programmes. A comprehensive exploration of ESD would also need to consider the role that learning in families plays, as well as mechanisms such as television, newspapers and the Internet, as all of these contribute to socialisation and enculturation, and hence, social development.

2.4 Conceptual approach

This study reviews good practices and gaps in ESD implementation in ten SIDS, with an emphasis on analysis rather than simple cataloguing of initiatives. The inquiry itself has been structured around three main pillars: access and coverage (the availability of ESD opportunities across the formal and informal education systems); quality and rigour of ESD implementation; and management and co-ordination. These three pillars are intended to provide a logical and comprehensive analysis of ESD implementation, with discussion of relevant findings – best practices and gaps – developed through the use of examples from the ten countries.

2.4.1 Access and coverage of ESD interventions

To explore the presence and absence of ESD opportunities, this section discusses relevant initiatives within subsectors of the education system, including: K-12 education; higher education and TVET; pre-service teacher training; in-service professional development of teachers and school leaders; non-formal and community-based education; mass media; as well as institutional capacity strengthening at the government level. Covering the key subsectors of the education system (leaving out only the family), the discussion in this section is focused on the sustainability-related learning opportunities in the ten focus countries. The intent has not been to comprehensively map out interventions, nor to rank countries, but rather to explore some of the good practices in each of the subsectors through discussion of key initiatives, as well as to recognise gaps in relevant policies and practices which impact implementation and the availability of learning opportunities.

2.4.2 Quality and rigour of ESD implementation

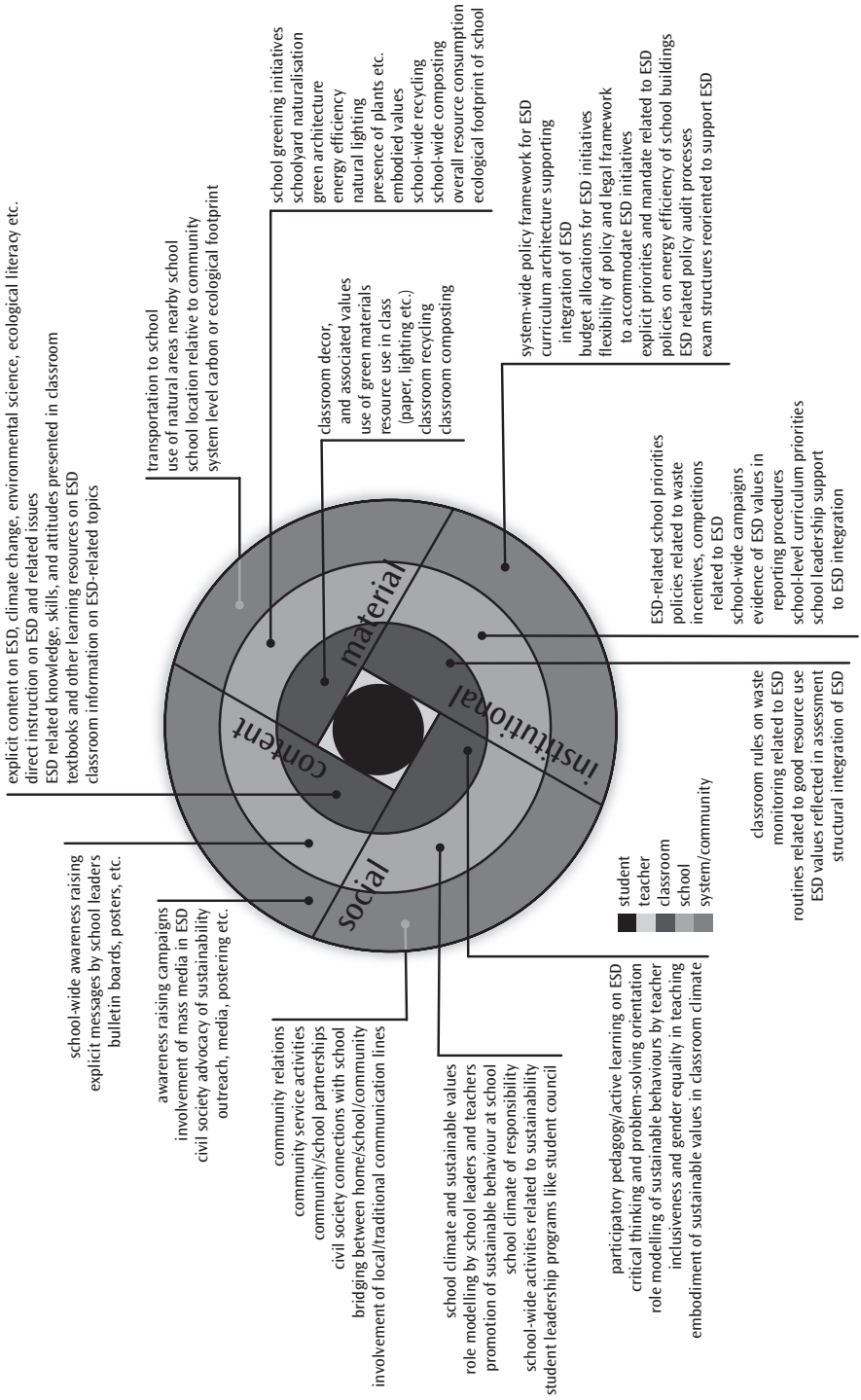
ESD is a developing concept, which emerged in part out of reflections on the insufficiency of earlier approaches, such as global or environmental education, that have sought to advance progressive goals related to environmental, citizenship, social justice, or cultural agendas. The concept of ESD that forms the basis for the analysis provided in this report builds on the literature and practical work to date. Grounded in an understanding that issues in sustainability are not – or at least not only – related to deficits in knowledge, skills, or even attitudes, there is a recognition of the need for ESD to support the development of more deeply-held character traits and dispositions – schemes of perception, thought and action – which link to sustainable development goals.

However, such dispositions and values cannot be taught directly. Rather, they are cultivated over time through a process more akin to socialisation than education in the colloquial sense (Bourdieu and Passeron 1990; Snyder 1970). This cultivation depends on the *context* in which a learner is immersed day after day, in addition to explicit *content* that is taught directly (Taylor 2008). The context is considered *educative* because it provides the background against which explicit knowledge is interpreted, and can either strengthen or subvert explicit learning on sustainability – consider the result, for instance, of learning about conservation in a wasteful school. Therefore, in addition to ESD-related content, this study has given consideration to contextual aspects of learning, including physical and material elements (school sites, learning materials, experiences in natural areas etc.), institutional and foundational elements (underlying policies, institutional structures) and socio-cultural elements (linguistic and culture-related factors). Figure 2.2 below illustrates this concept from the perspective of a school-based learner, recognising the nested system within which that learning takes place.

2.4.3 System management and co-ordination

While access and quality are often discussed in relation to education policy, a major factor affecting implementation is the institutional capacity of the system in which

Figure 2.2 Sample content and contextual factors impacting ESD outcomes at school



implementation is proposed. The final section of findings discusses good practices and gaps in the management and co-ordination of ESD from both an international/regional perspective, and a national perspective, rolling up insights gained through the review of information from all ten of the focus countries.

Note

1 The rationale for country selection is presented in Chapter 3. Methodology.

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Chapter 3

Methodology

3.1 Overview

This study was conceptualised as a best practices review and gap analysis of ESD implementation in ten SIDS. By design, and because of the limitations of the budget and timeline, the study was conducted remotely, with no travel to the focus countries. However, in addition to a review of available documents, information was also collected through correspondence, questionnaires, and interviews with a number of personnel from government offices, public institutions, multilateral organisations and civil society organisations (CSOs) involved with ESD implementation in the focus countries (see Appendix B). The direct contact with these individuals and organisations yielded a great deal of additional information as well as further documentation which was not available online. A list of documents reviewed is included in the Bibliography.

3.2 Technical scope

The technical scope of this study was focused on the identification of good practices and gaps in ESD implementation at the country level. The intent was not to produce a catalogue of activities across the focus countries, as a number of mapping exercises and related surveys have already been undertaken by other organisations. Rather, the intent was to produce an analytical report which would help to inform new directions in ESD implementation through discussion of what has been working well and what has yet to be accomplished. While this focus naturally involves some evaluative analysis, the study itself should not be taken as an evaluation or monitoring exercise. As such, no indicators or other preconceived criteria were utilised in the identification of good practices and gaps. Furthermore, it is recognised that what is considered to be 'good ESD' is contextually dependent and constantly evolving. As such, the author has adopted an appreciative approach, and has relied primarily on local accounts of what have been considered 'effective' activities – those that have achieved results, gained traction, or generated momentum in the focus countries. These good practices have been analysed in relation to the international literature on ESD, and in relation to the practices of other focus countries. Gaps, on the other hand, were identified largely as areas where there has been relatively little activity, or where information sources have identified barriers and challenges that could be resolved through some 'missing' intervention.

While the main focus of the study was on implementation at the country level, this scope evolved somewhat during the study to include discussion of the regional level, owing to the preponderance of regional activities and international organisations involved in ESD. However, the focus remained as much as possible on *implementation*

of ESD – which is naturally concentrated at the country level. While each of the countries has its own unique educational issues and socio-cultural/economic contexts, a full contextual analysis, and comprehensive mapping of more general educational considerations within each, was beyond the scope of this study. Rather, the intent was more simply to survey the ESD implementation of the focus countries in order to identify good practices that would be valuable to share, as well as to identify gaps where further work appears necessary.

3.3 Selection of countries

This study discusses the ESD implementation of ten countries. The original intention was to include *nine* SIDS, representing the Caribbean and Pacific regions, as well as Maldives. The selection of countries was aimed at creating a diverse and representative sample of Commonwealth SIDS from the Caribbean and Pacific regions. Consideration was given to a broad array of factors, including: cultural features (diversity, presence indigenous cultures and knowledge systems, religion etc.); landmass; population; per capita GDP; educational indicators (literacy rates, enrolment etc.); and characteristics of the formal, non-formal, and higher education systems. During the development of selection rationale, it was agreed that Mauritius could be included among the nine countries in order to have two countries representing the AIMS region. Rationale was developed informally through correspondence with the Commonwealth Secretariat, and through discussion of additional factors such as accessibility of information, the final country list was agreed to. Official letters were issued to the education ministries of the focus countries requesting the appointment of a focal point in each to provide support in collecting information. During the course of the study it became clear that there would be limited participation from a number of the focus country governments, and one additional country was added, giving a total of ten, in the interests of broadening the available information base and enriching the report. Table 3.1 below presents the final list of focus countries for this study.

3.4 Presentation of findings

The findings of the report are presented as ‘good practices’ and ‘gaps’. The former term was selected in lieu of ‘best practices’ with recognition that what works well in one country may be less appropriate in others, and that ‘best’ is a far more subjective term. Following each of the ‘good practices’ is a short section on ‘extending the good work’,

Table 3.1 Focus countries of this review

Caribbean region	Africa, Indian Ocean, Mediterranean and South China Sea (AIMS) region	Pacific region
Dominica	Maldives	Nauru
Guyana	Mauritius	Papua New Guinea
Jamaica		Samoa
		Solomon Islands
		Tonga

which outlines how effectiveness could be further increased, or provides examples of initiatives that enrich the finding. Similarly, each of the ‘gaps’ is followed by a short section on ‘bridging the gap’, which provides either suggestions for how this gap could be addressed, or gives examples of countries which are atypical and are demonstrating good work in this ‘gap’ area.

Since the study explores the work of ten countries, most of the findings are generalisations, and there are inevitably some exceptions to those generalisations. This is to say that for each of the ‘gaps’, there are usually also examples of one or two countries doing rather well in that particular area. Similarly, with some of the common ‘good practices’, there are inevitably some countries doing relatively less. This heterogeneity allows for some reaction against each of the findings – ‘good practices’ often reveal gaps that, if filled, could strengthen the good work; and broad ‘gaps’ sometimes provide a useful context within which to discuss an isolated case where that gap is being mitigated.

An appreciative approach rather than an evaluative one has been used, and while good practices are usually mentioned by name and country, gaps are presented more generally, with care not to single out individual failures. Contact details for the various ESD initiatives and organisations are presented in Appendix A. Where these initiatives are referenced in the main text, the titles are in italics to signify their inclusion in the appendix.

3.5 Limitations of the study and mitigation measures

Several constraints to the validity and generalisability of this study are acknowledged, generally stemming from the fact that it was carried out as a desk review:

1. **Lack of first-hand information:** As this review was conducted remotely, there has been no opportunity to obtain information through direct observation. The majority of the information utilised has come from the first-hand accounts of others – including reports, articles and individual accounts provided during interviews. Extensive online research was conducted, and a great deal of effort was expended in trying to establish contacts with individuals (both governmental and non-governmental) in the focus countries. In cases where this was successful, new information was obtained directly through interviews, correspondence and questionnaires.
2. **Limited current information:** The most current information available has been used. However, in many cases the information available online was somewhat dated. Because of its specialised nature, this study has sought earnestly to build on the existing knowledge base, and has therefore made extensive use of earlier reports and analyses in the field, including those whose shelf life has nearly expired. In cases where older reports were consulted, efforts were made to get in touch with the original authors in order to verify and update the information, or alternately to triangulate the information with other in-country contacts.
3. **Incomplete participation of governments:** The original planned methodology for the study involved working with government-appointed focal points in each of the

focus countries in order to obtain detailed information and first-hand accounts. However, due to a variety of factors, this approach had to be modified for some countries. The resultant methodology relied much more heavily on information obtained through contacts outside of the government systems, and information available online. The lack of individual contacts in some countries has resulted in an asymmetry to the report, with the work of some countries discussed much more than others.

4. **Incomplete information:** While every attempt has been made to access relevant information, there have been serious limitations related to the availability of ESD-related information in some countries. It is recognised that some of the good work being done may not be labelled as ESD or other obvious titles, and many good initiatives may have limited online presence. Accessing information online depends heavily on knowing what to look for.
5. **Non-generalisability:** Although ten countries constitute a meaningful sampling of Commonwealth SIDS, the findings of this study should not be taken to be generalisable. There is wide variability in both the contexts and ESD activities of the ten countries. Furthermore, it should be duly noted that Commonwealth SIDS are only a subset of a much longer list of small states, including many not belonging to the Commonwealth which differ quite markedly from those included in this study.

This study has been conducted with care for the accuracy of information. The draft of this report has been the subject of both an informal fact-checking exercise through circulation to key informants in the focus countries, as well as a more formal peer review process undertaken by the Commonwealth Secretariat. A full list of the information sources, including documents, websites and individuals, is presented in the Appendices and the Bibliography.

Chapter 4

Access and Coverage

4.1 K-12 Education

4.1.1 Good practice: Using broader education system reforms to lay an institutional foundation and create entry points for ESD

Ministries of education in SIDS are faced with a challenging mix of responsibilities, constraints and competing demands. Nonetheless, many countries have found opportunities to infuse sustainability-related content and relevant pedagogical approaches into their systems during ongoing processes of educational reform and modernisation.

In a relatively ambitious approach spread over the past eight years, Tonga has undertaken a broad review of its education sector, leading to the development of the *Lakalaka Policy Framework* which foregrounds considerations of culture and progress; a teacher professional development plan which makes reference to sustainability; and perhaps most notably, a new curriculum framework entitled *Quality Education for a Sustainable Future*, which places considerable emphasis on ESD.

An example from Solomon Islands is somewhat more representative of how ESD is being incorporated into reform efforts. In 2008, the country undertook a curriculum review, resulting in a national curriculum statement which calls for an outcomes-based approach to curriculum development across the system, while also highlighting the importance of values and attitudes that will be useful in later life. The statement identifies environmental and health education as guiding principles and highlights ethics and citizenship as key learning outcomes for the development of curriculum at all levels.

Most of the focus countries have adopted a similar approach. While working concertedly to modernise and strengthen basic features of their education systems, they have incorporated ESD-related rhetoric into their key frameworks, strategies and planning documents. Terms such as ‘sustainability’, ‘sustainable livelihoods’, ‘sustainable development’ and other related concepts are quite common in the key education documents of the focus countries. For ESD advocates this work may seem insufficient, but it nonetheless provides important entry points for motivated teachers as well as civil society organisations (CSOs) to undertake ambitious ESD initiatives such as whole school approaches. Furthermore, the strengthening of basic aspects of the education system – especially those related to quality – are fundamental to the good practice of ESD. While contemporary methods like student-centred and active learning pedagogies do not equate to ESD, there is broad recognition that effective ESD requires a shift away from lecture-oriented approaches to those which better engage learners. As such, these changes reflect an important step in the right direction.

Extending the good work: Education systems are multifaceted, with many subsystems. In order for ESD-related interventions to gain real traction, a concerted sector-wide effort is needed. It is not enough to adjust policy, or include reference to sustainability in curricula if, for example, examination systems remain grounded in content knowledge, or adequate teacher professional development is not provided to facilitate the shift. The Tongan example has good potential from the perspective of system-wide ESD integration because of the relative coherence of a number of its policy initiatives around themes of culture and sustainability. However, it will be important that adequate resources are attached to the policy decisions. Another systematic approach discussed in more detail elsewhere in the report is provided by Mauritius, which has undertaken a process of rethinking its national development trajectory through the concept of Maurice Ile Durable (MID), and along with this, is working towards the reorienting of its education system to support sustainable development.

4.1.2 Gap: Despite the presence of some supportive policies, ESD is not consistently making it into schools in a systematic or comprehensive manner

The above good practice of incorporating ESD rhetoric and entry points into national documents is an important starting point, and provides entry points for further activity. However such ‘presence’ in the official agenda does not necessarily translate into any systematic implementation at the school or classroom level. In many of the focus countries, ministry of education¹ (MoE) documents have only a small number of references to sustainability, making it more absent than present. In others, policies and curricula are strong on ESD, but the documents are too new to have resulted in strong implementation. Reports and interviews suggest that at the school level, ESD continues to be perceived as an add-on to academic programmes or incorporated into science classes as environmental content. In some cases, there may be good overarching policy statements that are not effectively translated into implementation strategies, and in other cases, sustainability may be integrated into the policy documents of some departments but not others. The result is a confusion or competition of priorities with fragmented implementation often being led by committed individuals, or by organisations (often CSOs) outside of the K-12 system. Despite good intentions and prevalent will among teachers and educational leaders, examples of high quality ESD being implemented at the school level appear few and far between.

Bridging the gap: There are some examples of relatively consistent approaches to ESD within K-12 systems leading to meaningful implementation. In Jamaica, for instance, themes relevant to sustainability have been included in curricula ranging from pre-primary (building foundations through learning to care for one’s self, as well as basic environmental knowledge) through to secondary (more academic, with complementary focus on social responsibility and environmental topics). However, even in the case of such systematic curriculum reform, the work has received some criticism, particularly at the secondary level, due to an emphasis on learning about the environment rather than a more integrated or comprehensive notion of ESD (Collins-Figueroa et al. 2005). Furthermore, as ESD is introduced in curricula, there continues to be a need for corresponding changes in other aspects of the system such as exam systems and teacher training to create an enabling environment for implementation.

In the Pacific, UNESCO has indicated that it has raised the prospect of comprehensive school or ministry-level sustainability programmes at a number of ESD workshops, but that there has been relatively little interest in this approach. Nonetheless, such an approach is what appears to be needed if concerted ESD implementation is going to proliferate at the school level. If decision-makers take sustainability as a core value, the potential for reorienting policy to support it is almost limitless. Consideration of such possibilities provides a sense of how whole school systems might be reoriented to push forward the agenda of sustainability concertedly. Some policy examples might include:

- A process whereby all new policies would be audited for environmental considerations such as: quantified projections of the carbon emissions the policy would result in; water, energy, land and other resource use; ecological impact; etc. (along with other considerations such as gender, culture etc.);
- Incorporating environmental audit criteria into school inspection and licensing processes, and including them in school performance reports;
- System-wide league tables of environmentally friendly schools;
- Policies around resource consumption at schools (water, energy, paper etc.) and waste management, aimed at reducing resource use, re-using materials, promoting recycling and reducing pollution;
- Procurement guidelines requiring consideration of environmental impacts, embodied energy (the sum of all the energy required to produce goods or services), carbon footprints and other ethical sourcing criteria when purchasing inputs for the education system.

4.1.3 Good practice: Giving students real experiences with nature, sustainability and caring for their environments

While other aspirations may exist, education in many countries can be characterised as a process of transmitting bodies of knowledge and skills. This emphasis on teaching content continues to characterise the practice of ESD. However, in most of the focus countries there also exist good examples of educators going beyond teaching ‘about’ sustainability and the environment to create a more active engagement of students with sustainability issues, which will result in more authentic or transformative learning. The broad range of extra- and co-curricular approaches includes clubs, field trips, special events, research activities, project-based rich tasks and whole school approaches. A small sampling of these initiatives will be illustrative of their diversity. In Guyana, the state Environmental Protection Agency (EPA) has been increasingly active in the school system, and establishes and registers school environment clubs, providing a number of supports and resources for club supervisors. The EPA also provides a number of other opportunities for schools, including in-school presentations and support for field trips, as well as other non-school-based activities. In terms of special events, reports from Jamaica refer to Earth Day, National Environmental Awareness Week, Peace Day and National Heritage Week; whereas reports from Samoa include references to World Food Day, World Environment Day, National Environment Week,

Arbour Day, International Ozone Day, Biodiversity Day and National Cleanup Day. While students' day-to-day experiences may still be dominated by rote learning in many cases, it is clear that there are a broad range of opportunities which schools and teachers are capitalising on to provide exposure to ideas around sustainability through extra- and co-curricular activities. In addition, there is evidence that student-centred approaches to learning are becoming more common, including research activities, discussions, project-based rich tasks and whole school approaches, thus contributing to an increasingly diverse and authentic learning experience for students.

Extending the good work: While the importance of the experiential activities mentioned above should be noted, their limitation is that they tend to be *supplemental*. The provision of one-off experiences through field trips and special events are likely to have limited impact on students and may even serve to trivialise important issues, as they are outside their daily routines. Part of the issue is that such 'add-ons' tend to be organised from outside of the education systems, initiated by CSOs or multilateral organisations. While there may be the endorsement of MoEs for such initiatives, they tend to survive as 'squatters' in the formal education system. More promising approaches are emerging in a number of countries, in which MoEs are more directly incorporating ESD into their core thinking on education. With a clear prioritisation of ESD, there is a chance for extra- and co-curricular activities to become a more influential aspect of students' daily experiences.

On the premise that students learn what they live, ongoing clubs and whole school approaches are more promising. However, these approaches are often threatened by competing priorities such as academically-oriented exams – sending a clear message to students about what is actually important. Since exams are a driving force in many education systems, one approach to encouraging a reorientation of classroom life towards sustainability would be to incorporate ESD more centrally into exams – not through the superficial inclusion of content, but by requiring a demonstration of relevant problem-solving and application skills, as well as critical thinking in relation to that content. Ultimately, for ESD to be successful, it will be important for MoEs to re-evaluate existing exam structures and assessment mechanisms, as well as other common drivers such as textbooks, and rework those drivers so that students, teachers, principals and supervisors have incentives to work with ESD more earnestly and comprehensively.

In the Caribbean, the Caribbean Examinations Council (CXC) has indicated an interest in ESD through participation in recent ESD initiatives. While existing exam structures and contents do not yet reflect a strong commitment to ESD, the basis for the ongoing development of CXC exam structures and related syllabus development is grounded in the concept of the creation of 'the Ideal Caribbean Person' (Jules 2011), as defined by the heads of government of the Caribbean Community (CARICOM). This definition includes concepts closely related to ESD, including: environmentally sensitive; democratically engaged; culturally grounded; historically conscious; and gender and diversity respectful (Jules 2011). If the CXC is successful in substantively integrating these foundations into its work, there is great potential for examinations to be a driver of education in the region to provide a more focused push towards ESD.

4.2 Higher education

4.2.1 Good practice: Development of specialised post-secondary programmes in priority areas for sustainability

A number of universities throughout the focus countries are offering programmes that focus on priority areas for sustainable development. Predictably, the most common examples come from programmes in environmental science, or tourism and leisure, supplying an important economic niche with graduates who have a grounding in principles of conservation and sustainable resource management. One example of a university aspiring to go well beyond this is the University of the South Pacific (USP). With twelve member countries, including four focus countries in this study (Nauru, Samoa, Solomon Islands and Tonga), USP is in a good position to play a leadership role in ESD throughout the Pacific. In addition to standard classroom-based delivery, USP has developed programme structures well suited to its island context, including a variety of distributed learning options where students can earn credit through self-study and distance education courses. Having been identified as both a United Nations university (UNU) regional centre of expertise (RCE) in ESD and an Asia-Pacific cultural centre for UNESCO (ACCU–UNESCO) Centre of Excellence (CoE), USP is the lead agency for the promotion of sustainable development in higher education for the Pacific islands. In addition, USP has taken a lead role in the implementation of the Pacific Regional ESD Framework. The university has highlighted quality, relevance and sustainability in its strategic plan, and offers a number of programme specialisations directly related to sustainable development.

In the humanities, the USP is also implementing a project entitled Mainstreaming ESD at USP to Enhance Education based Capacity Building for Sustainable Development in the Pacific Island Countries. The project is aimed at enhancing ESD opportunities in a variety of fields through innovative curriculum development and programme delivery methods. The project has three components covering teacher education, sustainability education and community empowerment. The sustainability education component in particular addresses a number of ESD priority areas which will provide opportunities for students to pursue studies and future careers in areas which will contribute to sustainability in the region, including: a Postgraduate Diploma in Sustainable Islands and Oceans Development; a Postgraduate Diploma in Environmental Sciences; and a new Master of Laws (Environmental Law). In addition to programmes under the Centre of Excellence Project, the USP's Pacific Centre for Environment and Sustainable Development (PACE–SD) – also co-ordinating the implementation of the regional ESD action plan – has a number of programmes of its own related directly to sustainability and climate change.

Extending the good work: Recognising the importance of higher education institutions in sustainable development, the United Nations Environment Programme (UNEP) has spearheaded the development of the Global Universities Partnership on Environment and Sustainability (GUPES). The main aim of GUPES is to promote the infusion of environment and sustainability concerns into teaching,

research, community engagement and management of universities and other tertiary institutions. Working internationally, GUPES, along with the International Network of Teacher Educator Institutions involved with reorienting teacher education to address sustainability, and the University Consortium of Small Island States (UCSIS), provide a potential support network for higher education institutions in SIDS that are interested in strengthening their work on ESD. In addition, regional networks such as the planned Pacific Network of Island Universities Higher Education for Sustainable Development Framework or informal networks such as the one established through the Mainstreaming Environmental Sustainability in Caribbean Universities (MESCA) audit discussed below, provide opportunities for the continued sharing of experiences between institutions for the strengthening of ESD-oriented programmes. This process has already begun, evidenced by the Network of Island Universities (NIU) EDULINK project, which brings together USP along with the National University of Samoa and the University of Papua New Guinea, resulting in new course offerings focused on thematic areas related to sustainability.

While global networks like GUPES have an important role to play in advancing ESD in higher education institutions, the role of USP in both the conceptualisation and implementation of ESD in the Pacific is particularly noteworthy. As a regional centre of expertise on ESD under the UNESCO model, USP has made important contributions to advancing ESD in the region. Currently, both the Caribbean and AIMS regions lack such a centre, and one source in the Caribbean has suggested that this is something that should be explored further. As a regional university itself, the University of the West Indies (UWI) would be in a good position to carry out this role, perhaps led by the UWI's Institute for Sustainable Development (ISD), which was established in 2006 with a mandate to make a more effective contribution to the sustainable development of the entire Caribbean region. The main objective of the institute is to promote and support sustainable development in the small island developing states and other developing countries (UNEP, undated). While the AIMS region has no such regional university, a similar approach – perhaps building on existing initiatives like UNESCO's Avicenna Virtual Campus (Mediterranean) or African Virtual Campus – could be considered.

4.2.2 Good practice: Assessing ESD in post-secondary institutions beyond the programme level

Recognising that any programme of tertiary ESD reform must begin with good information, a group of 33 concerned participants representing 11 Caribbean universities convened in 2009 to discuss how ESD could be assessed in order to yield useful data for planning and improvement. With the support of the United Nations Environment Programme (UNEP), this initial meeting marked the launch of the Mainstreaming Environment and Sustainability in the Caribbean Universities (MESCA) initiative. The methodology of this initiative involved adapting a tool that had been developed for use in African universities, Mainstreaming Environment and Sustainability in African Universities (MESA), for use in the Caribbean context. Subsequently, an ESD audit was conducted in six universities, including the UWI,

Mona Campus (Jamaica). The audit addressed the following areas in relation to ESD: curricula; teaching approaches; research and scholarship; planning; co-ordination; building and grounds; energy and water usage; waste management; and even diversity. What is particularly noteworthy in this audit is that it goes well beyond a simple checklist indicating the presence of sustainable development- related programmes of study. The MESCA tool delves quite deeply and comprehensively into higher education for sustainable development, and has yielded rich data, providing good initial understanding of many of the contextual factors related to ESD in Caribbean higher education institutions.

Other monitoring and evaluation activities have also been undertaken outside of the MESCA process. For example, an evaluation of the environmental studies programme at the University of Guyana was undertaken independently of the MESCA process in 2010. In the Pacific, under the EDULINK project, three universities have done some analysis of their programming in relation to ESD. As quality assurance in higher education receives increasing attention, it will be worthwhile to mainstream ESD-related criteria into all such appraisal and monitoring activities, not just those explicitly focusing on ESD.

Extending the good work: While there is often benefit to simply measuring something, in the sense that it helps to raise awareness and understanding, the biggest potential impact of an exercise like the MESCA audit lies in using the data set to guide policy and planning decisions. The findings of the MESCA audit have been cogently analysed, and the logical next step is to use this information for planning purposes, in order to build on areas of strength and address areas of relative weakness. As evidenced by a number of ESD mapping exercises in the focus countries, the follow-up on good research has sometimes been lacking. As the MESCA audit was apparently quite successful in gaining support and buy-in from stakeholders, it will be important to maintain this momentum to ensure that it results in meaningful changes, and not just good information.

Noting that the MESCA tool has proven useful, and that it was itself an adaptation from its African predecessor, there is good reason to believe it could be successfully adapted for use in other contexts as well. In the Pacific particularly, a number of university networks already exist, and multi-university projects such as EDULINK would provide a good opportunity for such research as a results-oriented monitoring approach.

It is also worth noting that the rationale for a study like the MESCA audit is not limited to higher education. There would be great value in further adapting this tool, or developing an alternative, for use in primary and secondary schools, and in TVET institutions. With the growing recognition of the value of whole school approaches to ESD, tools such as this one, which serve to illustrate what is meant by ‘whole school’, are an important step forward.

4.2.3 Good practice: Incorporating ESD into research and scholarship in post-secondary institutions

In higher education, while much of the emphasis on ESD tends to be on programmes of study – emphasising student learning in sustainability-related fields – the role

of universities as centres of research and scholarship is also important. With a recognition of their natural and cultural assets, many tertiary institutions in SIDS have begun to develop graduate programmes and research emphases on sustainability issues. This has led to a number of fruitful partnerships between university faculties, and between universities and other institutes. For example, the University of Guyana has an ongoing partnership with the Iwokrama International Centre for Rainforest Conservation and Development (IIC), which regularly hosts student groups, graduate students and scholars who are involved with research on biodiversity, natural resource management, ecosystem services and other specialisations. Demonstrating a solid understanding of the need for cross-disciplinary approaches in sustainable development, the university's School of Earth and Environmental Sciences was formed in 2005 by integrating programming from the Department of Geography, the Faculty of Arts, the Environmental Studies Unit and the Faculty of Natural Sciences, in order to provide students with the broad foundation needed to address sustainability issues.

USP, in addition to its leadership in co-ordinating ESD interventions across the Pacific, is also conducting innovative and well-grounded research related to sustainability and ESD in the region. Prominent themes in graduate research include equity, access and relevance – all of which relate squarely to central issues in ESD. As one illustrative example of USP's research activities, under the context of the NZAid-funded Sustainable Livelihood and Education in the Pacific (SLEP) project in Tonga, USP's Institute of Education (IoE) was commissioned to conduct a study identifying strategies and policy options that national MoEs could adopt in order to alleviate hardship in the region. In consultation with NZAid and the Tongan MoE, the IoE designed a study to identify the skills, knowledge and values that enable Pacific peoples to live sustainably in their communities. With IoE as the lead, and involving curriculum writers on the research team itself, the study collected rich data on local concepts of sustainable development and livelihoods, which in turn guided the development of a new national curriculum framework as well as new courses of study for primary schools.

Importantly, the study did not take its starting point from imported concepts of poverty, education or sustainable livelihoods, but rather worked from within Pacific knowledge systems, using local cultural constructs and terminologies which are germane but drawn from local worldviews. Tongan concepts such as poverty, wealth, livelihood and personhood (including the human relationship with the land) differ markedly from their non-Tongan equivalents, and working within such deeply-rooted local concepts was cited as a success factor in the work. It was acknowledged, too, that in order to remain coherent and not distort findings through the research process, an authentic research framework would be necessary. Building on the work of other scholars in the region, the team approached their work using the Kakala Research Framework. In this approach, the *kakala*, a traditional garland, is used as a metaphor for the inquiry process, with different elements of the garland providing rich local meaning to guide different aspects of the research methodology. In addition, the team incorporated Tongan ethical principles into the research design, and detailed culturally-relevant data collection techniques such as *talanoa* and *nofo* – local approaches to oral and narrative inquiry. This attention to working within local knowledge

systems was important to the authenticity, relevance and overall coherence of the research (Fua 2009). As evidence of this success, the research has subsequently fed into the development of Tonga's new draft curriculum framework which emphasises sustainability with a strong cultural element, reflecting a positive step in aligning ESD within the formal sector with local culture and values.

Extending the good work: While the Tongan example provides an exciting glimpse into the possibilities for ESD-related research, there remains a dearth of such research. While some of the work may be taken up by donor-supported projects such as SLEP, such work is often restricted by programme frameworks. Universities, and to a lesser extent private sector and civil society organisations, have a key role to play in responding to the need for high quality research on ESD. While there are strong examples of scholarship on ESD from all three of the focus regions, reports regularly highlight the need for more work in this area (see Collins-Figueroa et al. 2005; Down 2011; UNCSD 2012). Now eight years into the UNDESD, some fundamental questions remain unanswered, including:

- How can the effectiveness of ESD initiatives be assessed, and what should qualify as results?
- What impact do donor agendas or regionally-focused activities have on ESD at the national level?
- What is the impact of whole institution approaches on learning for sustainability at different levels of the system?
- What are the core competencies that teachers need for ESD and how can these be developed?
- What impact do different ESD initiatives actually have on student learning?

In an effort to mitigate the knowledge gap and provide a forum for the sharing of lessons learned on ESD in the Caribbean, the Nesoi Foundation undertook to launch *The Caribbean Journal of Education for Sustainable Development* (The Nesoi Foundation 2011). The inaugural issue of the journal was replete with high-quality scholarship from prominent academics and practitioners in the region. However, despite positive responses, the journal did not proceed to a second issue due to lack of funding – one of the unfortunate casualties of limited financial support for ESD.

4.3 Technical and vocational education and training

4.3.1 Gap: TVET programmes and structures oriented towards sustainability

Many tangible aspects of sustainable development are driven by higher education that connects sustainability with opportunities for economic participation for a growing number of young adults. With strong linkages to industrial and commercial sectors, and natural resource development, TVET is an important area of national ESD offerings. Through alignment with the business community, there should be a strong potential for mutual reinforcement between TVET institutions interested in ESD and 'green businesses' or social enterprises. However, there is no evidence of

such symbiosis to date in the focus countries. With the recognition of the important role of TVET institutions in advancing sustainability through the workforce, special attention has been given to reorienting TVET through a number of international workshops and symposiums in recent years (see for instance UNESCO–UNEVOC 2009). However, a review of papers from these meetings, including submissions from several of this study's focus countries, suggests that the emphasis tends to be much more on the quality of TVET programmes in general, including training and certification approaches, quality assurance mechanisms and a shift to competency-based approaches, rather than any explicit emphasis on addressing sustainability through TVET systems. While quality is necessary to the practice of good ESD (in TVET or any other form of education), there seems to have been a tendency to apply the term 'ESD' in the field, without significant attention to how TVET programmes might be reoriented to address sustainable development.

Bridging the gap: One positive exception to this comes from rural Guyana, where the Bina Hill Institute is working with local indigenous students to provide technical and vocational training in areas related to natural resources management, forestry and wildlife management, in addition to a more fundamental focus on life skills. Bina Hill is associated with the Iwokrama International Centre for Rainforest Conservation and Development (IIC), and both institutions place an emphasis on ESD in their educational offerings and institutional focuses, including contributions to research and monitoring of local ecosystems. With the support of the Guiana Shield Initiative and the IIC, Bina Hill has also offered courses on 'ecosystem services', reflecting the country's increased emphasis on preserving its immense natural capital and leveraging it in a sustainable manner to fuel development, as articulated in Guyana's national Low Carbon Development Strategy. The ecosystems services course provides students with basic environmental science foundations, as well as delving into aspects of monitoring and accounting for this natural wealth, thus helping to prepare them to participate in the green economy which is beginning to take shape in the country.

The case of Guyana, with 80 per cent forest coverage and very low population density, is quite distinct from that of the other focus countries. However, there are parallel opportunities in other countries related to the biodiversity and ecosystem services provided by reefs and other natural areas. In urbanised areas, entry points for ESD into TVET may be quite different. With a growing emphasis on employability and bridging school and work, a number of donors are beginning to focus on employment- and workforce-oriented programming. In terms of ESD, this presents an opportunity to explore entrepreneurship programmes targeting the green economy – an area of focus highlighted at the recent 2012 United Nations Conference on Sustainable Development (commonly referred to as Rio+20). Emerging areas in this field include social entrepreneurship (which uses business methodologies to produce social or environmental benefits), triple bottom-line business management (in which 'profitability' is balanced with considerations for 'people' and the 'planet'), micro-banking, sustainable livelihoods and other concepts focused on healthy, small-scale economic development. Working at the regional level, organisations like the Pacific Association of Technical and Vocational Education and Training (PATVET) are attempting to reorient TVET in the region towards a greater focus on life skills

and sustainable livelihoods, which – in addition to strengthening traditional areas of TVET activity – also provide entry points for supporting this kind of economic transition. As with other aspects of ESD implementation, the rhetoric may be ahead of the practice in this area, but nonetheless creates space for ESD advocates to pursue good work.

4.4 Pre-service teacher education

4.4.1 Good practice: Increased focus on ESD in teacher education institutes

In 2000, UNESCO launched a Chair on Reorienting Teacher Education to Address Sustainability and established an international network of teacher education institutions committed to this cause. The capacity of the teaching force was identified by many of the individuals consulted in this study as one of the major constraints to quality education in most SIDS, and this constraint is amplified in the face of effective ESD – which requires not only effective pedagogical skills, but also technical knowledge and skills related to critical thinking, problem-solving and sustainability issues. Notwithstanding that large portions of the currently-practising teaching workforce in many SIDS may have little or no pre-service teacher training, the reorientation of teacher training demands attention if ESD is to gain real traction. Responding to this need, a Caribbean Network of Teacher Educators was formed in 2004 to address sustainable development, and a number of related regional events have been held, including the development of a teachers' guide to ESD in the Caribbean and an online discussion group. A relaunch of this network is planned for November 2012, which should help to reinvigorate a focus on teacher ESD in the region.

To date, none of the focus countries has government-mandated ESD requirements for teacher certification, nor are there related mandates requiring teacher education institutes to offer ESD coursework. However, there is some excellent work being undertaken by teacher training institutes themselves to raise the awareness of ESD issues and practices among graduating teachers.

Progress has been particularly noteworthy in Jamaica, where earlier activities around teacher environmental education have provided a foundation for teacher education for sustainable development. As far back as 2000, teacher education innovators at Jamaica's Mico Teachers' College were exploring how teachers could use literature in the classroom to address issues of active citizenship and violence, as well as broader issues related to sustainability and social development. In a related initiative, academic staff at UWI developed a graduate course on literature and ESD, which has gone from being an elective to a course requirement in the language education programme. Another core course in teacher education, entitled *Changing Cultures Changing Schools*, explores school culture and change management, including an exploration of eco-schools. This work stands out because of its emphasis on literature, culture and citizenship, as opposed to the more directly environmental approach to ESD common in much of the Caribbean. Also notable in this regard is an undergraduate course in teaching Caribbean poetry, which was designed in collaboration with Cambridge University, and integrates a sustainability focus through a strand on literature and the environment. Moreover, work is underway to develop a new Master's level

specialisation in ESD (Down 2011). In addition to these courses, the university is also exploring ESD possibilities campus-wide. A steering group has been formed to prepare an implementation plan for a campus forum to plan for a whole institution approach to environment and sustainability.

In terms of demonstrable results, the Sustainable Teacher Environmental Education Programme (STEEP) appears to have had a lasting impact on teacher education in Jamaica. STEEP was implemented by Jamaica's Joint Board of Teacher Education (JBTE), and focused on teacher training institutes. The project integrated environmental ESD into a number of courses, and provided an interdisciplinary environmental education elective for pre-service teachers. The project also implemented a number of other activities aimed at action-oriented learning and campus greening. Through this programme, all the staff (including grounds, janitorial, housekeeping, culinary etc.) from four of the UWI-affiliated teacher training institutes became aware of their roles in ESD, and began initiatives for changing practices which have reportedly been sustained. Furthermore, the STEEP-developed course on Environment and Sustainability has become a feature of the BEd programme in eight teachers' colleges. This course, along with three other relevant courses – citizenship; personal development (life skills); and health and family life education – have been made compulsory for all pre-service teachers in the programme, regardless of specialisation (early childhood, primary, or secondary). As such, while government policy may not require new teachers to have training on ESD, these teachers' colleges are nonetheless helping to ensure that they do.

In the Pacific, leadership has been shown by teacher educators at USP's School of Education (SoE) and Institute of Education (IoE). These individuals have succeeded in attracting important resources to advance teacher ESD in the region, in particular through the UNESCO Chair of Teacher Education and Culture and the ACCU-UNESCO Centre of Excellence project. The SoE has sought to integrate mainstream sustainability issues into their teacher education programmes, and as such, while specific coursework around ESD is not required, many of the relevant themes and practices have been incorporated throughout the programmes. At the graduate level, a number of courses specifically touch on ESD, and a specialised postgraduate diploma in ESD has been proposed.

Extending the good work: In order for ESD to become broadly implemented, teachers must have an adequate background in it. For this to happen, it will be necessary to address ESD within teacher certification and training requirements. While part of this process can be led by teacher training institutes, it is important also that guiding policies which govern teacher certification, hiring and promotion paths complement such course requirements.

While policies, course offerings and course requirements will all contribute to the reorientation of teacher education to address sustainability, the rationale for whole school approaches to ESD in the K-12 school system is also valid in teacher education. The STEEP project was notable for the fact that it went well beyond curriculum development to look at how environmental principles were upheld at the institutes themselves. Many of the key teacher training institutes do not reference ESD or

sustainability in their mandates. More commonly, ESD is present only in optional components focused on environmental education or related issues. This relies on interested students to capitalise on the available ESD entry points, which is unlikely to result in a broad reorientation of teacher education unless policies are changed to incentivise or require ESD coursework. For its part, UNESCO (2007) has published a compendium of good practices in ESD from teacher education institutions, in addition to supporting the international network mentioned above. However, Jamaica is the only one of the focus countries whose primary teacher education institute is a member of this network.

For universities and MoEs that are truly committed to sustainability, a systemic approach would be to make teacher education on ESD a requirement for graduation and certification. While this appears some way off in most of the focus countries, many have taken an important step by including ESD content specifically in their K-12 curricula, which should in turn influence what gets included in teacher education curricula. While universities like UWI and USP are responding by mainstreaming and mandating ESD in their programmes, it is important to keep in mind that including ESD content is not the same as a true reorientation of the educational process. In teacher education for sustainable development, as in other ESD, the objective is to put in practice a new and more active and sustainability-oriented vision of education, rather than adding to that which is already in place.

4.5 In-service professional development for teachers and school leaders

4.5.1 Good practice: Localised, focused, curriculum-linked teacher training accompanied by resource materials

Projects like Jamaica's STEEP and USP's Centre of Excellence have recognised the critical role of teachers in ESD implementation. However, the reality in most SIDS is that many practising teachers lack formal training, and few have any training at all related to ESD. As such, while pre-service teacher education is important, the in-service professional development of practising teachers is of immediate concern.

Over time, a number of lessons have been learned about in-service professional development for ESD, which have improved the general practice. In Maldives, ESD themes have been incorporated into broader pedagogical reforms, which have included training of teachers on inquiry-based approaches to teaching environmental education. This approach shows strength in that it recognises the importance of balancing ESD with other compatible reform agendas, and emphasises active learning and the direct engagement of students with environmental issues. In Jamaica and Guyana, emphasis has been on curriculum linkages and locally relevant content, and evidence suggests also that both resource materials and training are strengthened when they are paired with one another. In both the School Environment Programme (SEP) (Jamaica) and the Mangrove Management Programme (Guyana), teacher training was provided with resource materials in order to ensure that teachers were comfortable with using the resources in their classrooms.

Extending the good work: Although ESD is on the agenda of most of the focus countries' MoEs, most MoEs have not been actively involved in teacher professional development on ESD. Where MoEs have been involved, the work has tended to be on an ad hoc basis, or through broader training programmes with only tangential relevance to ESD. More commonly, teacher professional development on ESD has been undertaken by CSOs (such as the Jamaica Environmental Trust (JET)'s School Environment Programme in Jamaica) or multilateral organisations (such as UNESCO). There is a missed opportunity for better co-operation in this area, since in many cases CSOs are providing ESD training to public sector teachers – which should arguably be the responsibility of MoEs – but without full MoE support or formal endorsement of the work. For example, while many countries have a credentialing system that requires teacher professional development, there is no evidence of CSO-delivered training on ESD being credited in any of these systems, even when the CSOs have sought this out. Where MoEs or other government departments are involved, in-service teacher training on ESD tends to be undertaken on an ad hoc basis or through donor-funded projects. As such it remains somewhat peripheral to the core of teacher development. There is little evidence from any of the focus countries of systematic MoE-led teacher training on ESD, or relevant policies that would make such training broadly available or mandatory.

4.5.2 Gap: The implementation gap – putting training into practice

While the provision of professional development opportunities on ESD is one thing, one-off training activities often fail to translate into actual changes in classroom practice. Teachers may learn about ESD and related topics, and may be highly motivated during training activities, but upon returning to their classrooms they struggle to find the time or means to effectively implement what was learned. This is disheartening and inefficient. As attractive as training activities may be to donors as a means of targeting large numbers, and as a means of disseminating ESD knowledge and skills, the surrounding context of such training and the anticipated classroom implementation need to be given serious consideration.

Bridging the gap: Through over a decade of experience with the School Environment Programme (SEP), the JET has developed a number of working principles to help ensure the effectiveness of the programme. In the SEP approach, training is not conceived of as a one-off event expected to change teaching practices on its own, but rather as a component of a broader system of supports and incentives which exerts a positive force on teaching practices over time. Their 'fertile ground rule' requires that schools interested in participating in the programme submit an application endorsed by at least two teachers, as well as the principal. The application process helps to ensure a minimum level of commitment, as well as ensuring that there are a sufficient number of interested parties in the school to give the programme life. When training is provided in this context (typically at least twice per year), it occurs alongside a number of programme support structures, which reduce barriers to teachers implementing what they have learned. Training certificates signed by government officials provide formal recognition of participation, and the support of principals and supplementary resource materials (teachers' guides), as well as follow-up school support visits by SEP staff, enhance motivation to do the work well.

In essence, the SEP approach provides a set of incentives and supports, which makes it as easy as possible for teachers to implement effectively what they have learnt. This approach is consistent with many of the recognised best practices in teacher professional development more generally (see for example Garet et al. 2001), which highlight the importance of making professional development a contextually-relevant ongoing process. However, as a CSO, the SEP works with teachers from outside the MoE system, and this limits the potential impact of the work. While CSOs may be able to align much of what they do with MoE systems, MoEs themselves have much more scope to align and support ESD training. Ideally, ESD-related professional development would be undertaken alongside complementary initiatives including those mentioned above, as well as curricular and examination reforms, linking training on ESD with re-certification or promotional pathways, school improvement programmes, ESD training for principals and so on. Additionally, such professional development could come with a requirement that participating teachers pass on their training in their home schools to help expand the reach of ESD training when resources are limited.

4.5.3 Gap: Establishment of ESD-oriented ‘learning community’ mechanisms

One of the growing trends in the field of teacher professional development, particularly in under-resourced and rural contexts, is the concept of professional learning communities (PLCs). PLCs, in their most basic implementation, are simply groups of practitioners who share and discuss their work. The structure is flexible and can be formalised to include scheduled topics, chairpersons and presentations. The model works well at the school level (for small schools) or with grade level or subject area groupings (in larger schools), and has demonstrated effectiveness in improving teacher pedagogy as well as learning outcomes in contexts where resource constraints make it difficult to implement more conventional (training-oriented) teacher professional development models. The PLC model would be appropriate for the sharing of ideas and practices around introducing ESD in the classroom, as well as the implementation of coherent school-wide approaches. As PLCs can be implemented at the school level, the model is potentially viable in the context of isolated island communities.

Bridging the gap: While many schools have regular staff meetings, these tend to be administrative in nature, rather than focusing on school improvement and quality issues. However, with this culture of regular meetings in place already, a shift towards a more pedagogically-oriented PLC meeting could be introduced effectively. Similarly, in contexts where professional development is already being offered using a cluster approach, PLCs could be implemented using existing cluster structures. With support from central or district level offices, in terms of resource materials on ESD, this could be an effective means of proliferating ESD principles throughout the system. Experiences from other countries suggest that it works well to introduce the PLC concept first in relatively competent and receptive schools. In a ‘change catalyst’ model, these schools would theoretically work towards systematically implementing ESD school-wide, eventually becoming demonstration sites of effective ESD that could support other nearby schools.

4.5.4 Gap: Targeting school leaders as key change agents in school-based ESD

A number of interviews and reports suggest a perception that schools are the ‘units of change’ in ESD implementation. This is to say that despite national policies and available resources or supports, it seems to be at the school level where ESD is either brought to life or not. Where effective ESD is taking place, it tends overwhelmingly to be in schools where there is a highly engaged and motivated principal, or another influential staff member taking on this leadership role. It is notable, therefore, that there is very little evidence of work being done to build the capacity of principals to introduce ESD in their schools. Like the teachers in their schools, many principals lack any specialised training in educational leadership, and very few have any training in ESD. As focal points and sometimes gatekeepers at their schools, this group of leaders will be important to the successful rollout of any broad scale ESD-related initiatives, including those related to the introduction of new curricula.

Bridging the gap: While little information is available on leadership work in ESD, sources from Tonga have indicated that there are monthly meetings for school leaders. Such meetings provide an important forum for sharing of information and experiences, and rollout of programmes related to ESD. In the case of Jamaica, accompanying environmental education programmes, the Management Institute for National Development (MIND), which is responsible for training government employees, offers ESD courses for both teachers and school leaders. In addition, some of their core programmes, such as one focused on school management, have been adjusted to include ESD and related issues. As quality-related education reforms continue, and ESD implementation progresses in the focus countries, one area where the two could come together is in the development of professional standards for school leaders which incorporate ESD awareness and/or practices. If this approach were combined with standards for school inspection and supervision that incorporate environmental audit criteria, school planning frameworks which include greening initiatives and professional development around ESD, a strong push towards the implementation of whole-school approaches could be generated.

4.6 Non-formal education/community education

4.6.1 Good practice: Bridging school-based ESD with community life

There are a number of organisations that are working to provide ESD experiences for school-aged children, both in and out of school. This continuity between the school and the surrounding community helps to create a consistency of experience that reinforces messages about sustainability, resource use, consumption and other related concerns. A number of organisations involved with ESD activities are implementing packages of complementary activities, which are creating synergy between experiences in and out of school.

One such organisation is Live & Learn Environmental Education (LLEE). LLEE is active across the Pacific region, and implements a variety of ESD-related programmes specific to the needs of the host countries, which include three of the focus countries of this study: Maldives, Papua New Guinea and Solomon Islands. In Maldives for

instance, LLEE has been involved in projects to support local partners in school-based environmental education, while also working with partners at the community level on public awareness-raising and environmentally-aware community development initiatives. Working across several sectors and levels in this way contributes to a coherent picture of what sustainability might mean in the lives of growing school children. Another programme, of broader geographical scope but narrower technical focus, is Sandwatch, one of the flagship projects of UNESCO's global Associated Schools Project Network (ASPnet). While some of the Sandwatch activities are school-based, the emphasis of the programme is on student and teacher involvement in the monitoring and preservation of coastal areas. As with the work of LLEE, the connection between what gets perceived as important at school, and what gets perceived as important outside of school, contributes to the success of the Sandwatch programme. In addition, the emphasis on collaborative and critically-oriented activities involving both children and adults contributes to the development of engaged citizenship and civic-mindedness, both of which are important to sustainable development.

Extending the good work: Both LLEE and Sandwatch have managed to forge relationships with school systems and individual schools, allowing some connection between out-of-school activities and in-school learning, but this bridge is limited to particular themes and activities. With better support and leadership on the government side, a more robust connection could be established. There is untapped potential to strengthen ESD in this manner. This may require a component of community education, as some MoEs have indicated that there is often parental pressure for schools to maintain a strong focus on preparing students for exams. However, the success of a number of initiatives focused on introducing sustainable livelihoods in the curriculum, as well as attitudinal surveys, such as one which UNESCO has carried out on HIV/AIDS education, suggest that a focus on life skills may be a good entry point for bridging school-based and community-based ESD.

A promising government-led approach to collaboration with civil society is being initiated in Maldives. Under this programme, the Education Development Centre (EDC) has assigned interested CSOs to particular schools to work with students on a selected ESD-related project. Some of the schools have selected energy as a focus, and students have been responsible for conducting energy audits and related programmes. The approach helps to funnel CSO activity into appropriate channels so that expertise is applied in ways that complement school activities. Furthermore, because the curriculum of Maldives includes 'using sustainable practices' as a key competency, there are numerous curriculum entry points where ESD activities supported by CSOs can tie in with classroom-based learning.

One country where strong community/school links of a different sort have been noted is Samoa, where the Ministry of Education, Sports and Culture (MoESC) has developed formal partnerships with local communities for the provision of quality educational services. Typically, the MoESC provides teaching staff and materials, while the community supplies land and buildings. In a context where formal education has been criticised for being overly-academic and detached from daily life, this model of joint

ownership creates a foundation for co-operation on ESD to help better integrate school and community. However, the extent of communication and co-operation between the school and community is often dependent on the motivation of principals or the community itself. At the central and district levels, consideration should be given to how ESD may be fostered through working with school management committees, boards of trustees, or other joint planning groups.

4.6.2 Good practice: Providing a progression of learning opportunities in local natural environments

One of the tenets of good environmental education, and good ESD, is the provision of learning opportunities in natural environments, in order to provide first-hand experience with nature for the purposes of deepening understanding and developing a sense of place. Children and young adults in many SIDS have excellent opportunities for such experiences, ranging from informal to very well-structured. In an innovative programme targeting the needs of inner-city youth in Jamaica, the Jamaica Environmental Trust (JET) has worked with youth and community organisations to arrange trips to nearby natural areas where the youth could gain first-hand experiences with the country's rich flora and fauna. For many of the youth, having never been outside of urban environments, the experiences provided them with strong and lasting impressions. While these experiences may be frightening to some, for others they provided an entry point to environmental learning. As JET is involved in many aspects of ESD, as well as research and advocacy on sustainability issues, the organisation is well-positioned to help connect these children with additional learning opportunities as they grow.

Situated in a rural rainforest area, Guyana's Iwokrama International Centre for Rainforest Conservation and Development (IIC), has a very different context. In addition to hosting world-class research scientists and international student groups, the centre runs a broad range of outreach and educational programmes for the youth of the local indigenous communities. Among other community-oriented programmes, IIC runs wildlife and conservation clubs, providing for many local youth a first opportunity for systematic and scientifically-inclined learning about their natural environment. Unlike the urban youth mentioned above, these local youth come with vast knowledge and experiences developed through their lifelong immersion in the local area and their enculturation within the indigenous knowledge system. As such, the scientifically-oriented learning provided through IIC is complementary, and the centre has developed an approach that validates both knowledge systems and their value in ecosystem management. IIC has developed the concept of a 'conservation leadership ladder' whereby a progression of experiences from easily accessible entry points like these clubs can provide a first rung, and subsequent experiences such as the centre's training courses on subjects like forest botany, tourism and guiding, resource management and so on, can (and does) propel them into lifelong careers in conservation, as well as post-secondary and even graduate studies.

Extending the good work: The concept of the conservation leadership ladder has a great deal of potential for cultivating leaders in sustainable development, and

has relevance beyond conservation and even beyond the environmental sector to other aspects of sustainability including civic engagement, law, social justice, public health, culture and the arts and so on. The model is essentially based on the idea of providing initial exposure and accessible yet engaging learning experiences (like those provided by JET for inner city youth), and ensuring that incremented opportunities for increasingly formalised learning continue to be made available. While IIC is distinctive in being able to offer a very broad range of experiences itself, from community outreach to world-class scientific research, this same principle can be applied to other areas and institutions, with the idea of ensuring that those with the will and capacity to pursue work in the field of sustainability are not prevented from doing so for lack of opportunity. Over the years, IIC has learned from its experiences, and has cultivated a broad range of formal and informal partnerships with various programmes and institutions, both foreign and domestic, resulting in an extensive network of expertise and opportunities benefiting students in their programmes, as well as strengthening the programmes themselves.

4.6.3 Gap: Systematic approaches to community-based ESD

A number of sources have noted the importance of community-based non-formal education and information sharing. While community-based educational structures do not resemble educational institutions in the colloquial sense, they are well-established cultural institutions in most of the focus countries. However, the available information on community-oriented ESD focuses on standard delivery non-formal education programmes (workshops, community events etc.) and university outreach programmes. Furthermore, one of the challenges cited to the progress of ESD implementation has been that these traditional community-based institutions are sometimes at odds with policies and decisions related to education and ESD implementation coming from the formal sector. This suggests a need for a more systematic approach to working within these existing community structures, with full respect for the customs and approaches used for sharing of information within them, for stronger community-based ESD.

Bridging the gap: A small number of initiatives have identified practices that seem to have potential to make the desired community-level impacts. The IIC mentioned above has identified an unexpected benefit related to their programming and hiring practices, which gives some preference to applicants from local indigenous communities. What IIC has observed is that in addition to individual benefits related directly to their programme involvement, a meaningful number of these former staff and students have subsequently gone on to influential positions in their communities. With such relationships between the centre and nearby community leaders established over time, IIC is in a very good position to support broad and powerful community-based ESD within traditional channels.

Also in Guyana, an organisation called ECHO (Environmental Community Health Organization) has been working actively at the community level. Their Green Ambassador Programme involves youth in community-oriented service learning activities that help them to contribute to conservation and sustainability at the local

level. This programme has drawn participants from school-based eco-clubs which are common in the country, and is part of a tiered approach to ECHO's work with communities that also includes the establishment of eco-teams involving adults and community leaders to support student and youth activities (Kaieteur News 2010).

In another example, work done in Nauru under the PRIDE project (see section 5.1) – while aimed at information gathering rather than dissemination – utilised highly sensitised approaches to working in communities, with great success, also resulting in openness and positive relationships between individuals. These same approaches would likely have some applicability for work within communities in ESD delivery.

4.6.4 Good practice: Provision of topical ESD opportunities at the community level

Across the focus countries, there tend to be plenty of opportunities for learning for community members interested in seeking them out. In most cases, there are a number of government departments involved in awareness-raising on sustainability issues. In Guyana for instance, the Civil Defence Commission has a community programme which addresses disaster risk management, as well as issues related to resilience and adaptation. In Jamaica, with a very active environmental advocacy community, a great number of community-based groups are raising awareness and mobilising communities in conservation activities. Universities are also involved in outreach work and quasi-formal continuing education work. USP, for example, has conducted numerous activities related to climate change. In the Pacific, intergovernmental and civil society organisations similarly tend to be very involved. The Secretariat of the Pacific Regional Environmental Programme (SPREP), among others, is active in implementing community-level programmes related to issues such as biodiversity conservation, waste management and other environmental themes.

Extending the good work: Part of the challenge of ESD is the integrated nature of sustainability. Sustainability is not a collection of individual issues; it is a holistic systems approach to viewing the human position in the world – typically described in social, economic and environmental terms. The challenge for organisations delivering topic-based or thematic programmes is around making them somehow cohere with one another. This challenge is exacerbated by the availability of funding – the lifeline of most CSOs – which tends to pigeonhole programming and reporting into particular topic areas, creating a disincentive for big-picture thinking. At present, it tends to be larger organisations such as UNESCO which have the stability to think big that provide the glue which holds these many disparate initiatives together into a somewhat coherent framework. However, at the ground level, this coherence may be somewhat less. While regional and country-level frameworks can contribute to directing donor funds into the areas which need them most, it is also important for governments and multilateral groups to support networking and collaboration between different groups in order to avoid duplication, and foster complementarity and synergy between activities.

4.7 Mass media and outreach

4.7.1 Good practice: Collaboration between ministries and mass media outlets

With so much focus on formal education and non-formal education, the potential of mass media for awareness-raising and dissemination of information is sometimes overlooked. However, there have been a number of promising collaborations on ESD between ministries and mass media outlets. In an innovative approach from Samoa, the Climate Change Quiz Competition involved colleges across the country, and was televised live over a period of several nights. This competition engaged students and teachers, and helped to raise public awareness of environmental issues and information. In Guyana, under the Mangrove Management Programme, the MoE developed teaching materials as well as a complementary DVD of a programme entitled *Holding Back the Sea*. On their own, these resources might be unremarkable, but what is special is that the programme is aired regularly on Guyana's Learning Channel. In addition, the teachers' manual includes information on conducting field trips to mangrove reserves. As such, a number of complementary pieces are in place to provide students with a rich learning experience in relation to mangrove preservation.

Extending the good work: Most SIDS have a number of publicly-funded or education-oriented media outlets, as well as independent media, in addition to those that are commercially operated. These provide good entry points for co-operation and advocacy around public-oriented ESD. Tonga's Ministry of Education, Women's Affairs and Culture (MoEWAC) is working to seize this opportunity, getting involved in national and regional media industry-oriented workshops, in order to foster opportunities for co-operation. The ministry has worked with local media to educate them on agendas such as EFA, the MDGs and the UNDESD, and one representative has indicated that the media has become a 'catalyst and advocate for local co-operation and contributions to sustainable development, especially at the grassroots and community level'.

4.7.2 Gap: Leveraging the potential of mass media as a medium for ESD

ESD has come to be associated with, inter alia, small-scale and natural approaches, hands-on experiences with nature, grounded in indigenous knowledge systems, activity and engagement, as well as critical and creative perspectives on important social and environmental issues. None of these associations are commonly made with mainstream or mass media sources. While the workings of mass media may run contrary to much of the established thinking on 'good ESD', the reach and impact of mass media as mechanisms for raising awareness and even affecting public opinion are undeniable. As such, there is probably a great deal of untapped potential in the use of these media for awareness-raising campaigns related to sustainability issues. The review of available information turned up no reference to systematic work with mass media for ESD. The few references to media, like those mentioned above, have tended to be focused on particular issues, with no broader plan for systematic awareness raising on sustainability in more comprehensive terms.

Bridging the gap: Certainly the collaborations mentioned in the preceding ‘good practice’ suggest the viability of working with media outlets, as well as the potential impacts. As evidenced by the climate change quiz programme, in popular programming formats such approaches can generate considerable excitement and interest. However, there is always a danger of trivialising important issues that warrant more critical analysis, and therefore such approaches need to be carefully considered and thoughtfully implemented. While the two examples mentioned above were television-based, good opportunities remain through the development of engaging online platforms, as well as radio and newspaper content. In one example from Samoa, the Ministry of Natural Resources and the Environment (MoNRE) has produced a weekly column for the local newspaper, intended to help foster environmental awareness and engagement among young people. For its part, UNESCO has done quite a bit of work in the area of media capacity development, with programmes focused on a range of sustainable development issues such as climate change, HIV/AIDS, and the MDGs. UNESCO has also developed a training resource entitled *Media as partners in education for sustainable development* (Bird et al. 2008), which provides suggestions and examples of how the relationship between media organisations and education systems can be enhanced to support sustainable development.

Another potentially powerful tool that has yet to be utilised on any large scale in the focus countries is that of social media and new media tools. While different countries and cultures may vary in their preferences for social media, the importance and prevalence of online activities is increasing steadily. A number of CSOs from the ten focus countries have some online presence, including Facebook pages and Twitter accounts, but in most cases there appears to be little activity on these sites. One emerging trend in the new media that could have very good potential for enhancing ESD activities is ‘gamification’, which applies game design techniques and approaches to non-game contexts in order to encourage the adoption of certain behaviours. This approach could work well in school greening initiatives, for example, if structures were set up to award points or otherwise reinforce and incentivise waste reduction and resource conservation through student-led monitoring. Related game techniques include the awarding of points for certain activities, badges or certificates for certain accomplishments, as well as levels of achievement. The structure could be established to bring groups together, working co-operatively to implement ESD activities, or to create friendly competition between classrooms or schools. While such an approach runs the risk of trivialising sustainable behaviours, or focusing too much on superficial activity and extrinsic motivators, there could nonetheless be merit in exploring the idea further in relation to whole school ESD approaches.

4.8 Institutional capacity strengthening

4.8.1 Good practice: Building institutional capacity for sustainable development – ESD for governments

ESD discussion usually focuses on formal and non-formal educational structures, and one area that is easily overlooked is the learning of governments themselves. As with teachers and community members, most of those in influential governmental posts

have limited background in sustainable development, and the existing structures of most governments were not established with sustainable development in mind. Working with experts outside the government system in the development of sustainability plans and policies may result in quality deliverables, but does little to build internal expertise or institutional capacity. Recognising the need to establish better means of supporting and leading sustainable development, some of the focus countries have undertaken restructuring and educational activities to grow and adapt organisationally for this purpose.

One example of such an approach is Jamaica, which through the Environmental Action Programme (ENACT) programme, sought to promote its own sustainable development by increasing the capacity of key institutions in the public sector, private sector and communities, to manage resources and the environment in a sustainable way. The programme used a capacity development model that involved individual-level training to develop knowledge and skills, as well as working with organisational structures to improve procedures and mechanisms to enable those individuals to apply their learning better. ENACT aimed ultimately to impact the system level to enable supportive policy, legal and institutional frameworks. As part of this process, the programme worked closely with the National Environmental Protection Agency (NEPA), and established a National Environmental Education Committee (NEEC) within it. NEEC went on to develop Jamaica's National Environmental Education Plan for Sustainable Development, as well as a number of curriculum modules and other deliverables.

Extending the good work: As governments respond to the imperatives presented by climate change and globalisation, many are recognising the need to grow and adapt, rather than simply working harder or redirecting resources within existing structures. To accompany the development of its Low Carbon Development Strategy, the Government of Guyana in 2011 established a new Ministry of Natural Resources and the Environment (MoNRE). Similarly, recognising needs of its own, the Government of Tonga recently established a new Ministry of Training, Employment, Youth and Sport (MoTEYS), affirming a commitment to training and employment in the country. There is also a growing recognition of the need to revisit the existing structure of line ministries. Through the Tonga Education Sector Programme (TESP), for example, Tonga's Ministry of Education, Women's Affairs and Culture undertook its first ever approach to sector-wide strategic planning, resulting in a number of substantive changes to approaches and policies. These activities all reinforce the view that ESD is not something that one party subjects another to. Rather, it is a process of ongoing learning and iteration whereby all involved should grow and adapt as a result.

Note

- 1 Ministry of education (MoE) is used as a generic term, recognising that different countries use different names for line ministries.

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Chapter 5

Quality and Rigour

5.1 Content and concepts related to ESD

5.1.1 Good practice: Developing authentic and locally-relevant conceptualisations of sustainability and ESD

Literature on ESD stresses the importance of local relevance, and a number of countries have undertaken promising and successful processes to develop an authentic vision of what ESD should mean in the context of local daily life. One of the criticisms of some donor and multilateral initiatives is that they have tended to reflect the agendas of donor countries related to ‘flavour of the day’ issues, thus fragmenting development efforts in recipient countries and hijacking local capacity. In recent years, some of the organisations involved have astutely recognised the need to move away from preconceived notions of ESD and associated jargon, and work with local groups to pursue related ideas on their own terms. Practically speaking, organisations such as the Pacific’s Secretariat of the Regional Environmental Programme (SPREP) and the Jamaica Environmental Trust (JET) have sought to develop or adapt resource materials to the specific contexts of the countries and people they are working with, trying where possible to connect sustainability and environmental values with local cultural values and practices.

There are examples of this approach being taken much further than the development of resource materials. One subproject implemented under the NZAid-funded Pacific Regional Initiatives for the Delivery of basic Education (PRIDE) project focused on incorporating sustainable livelihood skills into the basic education curricula of Nauru. At the time of implementation, the country was facing serious economic hardship, and there was a need for a return to traditional skills to supplement the income of families who had previously accumulated wealth through the phosphate industry. There was genuine concern that such traditional life skills had been lost. Working from locally-identified needs, a team of project personnel and classroom teachers developed culturally-appropriate methodologies and research skills in order to seek out local elders and access traditional knowledge. Their process involved consideration of Nauruan ethics, and of traditional knowledge systems and deeply held beliefs about human relationships to the local environment, in order to begin documenting skills related to earning a livelihood from the land and ocean. Additional data was also collected around more contemporary skills such as handicraft making and bicycle repair. The project then worked with the teachers to translate this network of knowledge, skills and beliefs into grade nine teaching units, largely within the context of what is referred to as a ‘rich task’ – a multidisciplinary cross-curricular project. These units were subsequently incorporated into the national curriculum proper. This example illustrates a successful application of donor funds to support the

development of authentic and meaningful local initiatives under the banner of ESD. While this work was undertaken on a very small scale within the context of a larger project, it provides inspiration as an approach to implementing ESD that benefits from the expertise of local end-users.

[...] for many Pacific Island people, ESD has become problematic because for over a century our education systems have been dominated by foreign cultures, knowledge systems and communication networks most of which often viewed the earth as something to be exploited for profit, resulting in the destruction of much of our biodiversity, the foundation of our livelihoods for millennia. Fortunately today most of us still have our living cultures from which to learn to re-centre and reorient our education towards sustainability.' (Thaman 2009: 61)

Extending the good work: The example from Nauru illustrates an effective approach to developing curriculum with deep cultural roots and local meaning. In recent years, culture has received increasing attention in ESD discussions not only because of the entry points which many indigenous cultures can provide for sustainability (having persisted for millennia already), but also because of a growing awareness that sustainable development requires cultural shifts in attitudes and behaviours which cannot be brought about through conventional didactic methods. This perspective draws 'ESD' as a concept closer to the process of 'enculturation' than 'instruction'. This acknowledgement underscores the importance of situating ESD initiatives within cultural thinking and working to root ESD concepts within local knowledge systems. This may require new approaches to programme design and project management for stakeholders in the donor community.

Appropriately, each of the focus countries appears to be developing its own unique ESD concepts and approaches, informed by regional trends and issues. There is room in this context for cross-pollination between countries in order to enhance the work done in each. For example, Jamaica has a very strong history of environmental education, and much of the work on ESD is being built on this foundation – thus retaining a strong environmental element. However, the need for inclusion of more cultural aspects of ESD in Jamaica has been noted (Down 2011). In other countries which have been pursuing a more culture and livelihoods-oriented focus, ESD concepts would benefit from a stronger element of environmental advocacy. There would be immense value in a more systematic approach of sharing ideas between SIDS, not only with each region (as this is already happening), but also around the world.

5.1.2 Gap: There is a need for a stronger and more coherent formulation of what students should be learning

The notion of 'ESD content' is a topic of considerable debate. There an understanding among those consulted for this study that ESD should not be framed as a body of content (knowledge and skills) to be taught and learned. Rather, there is a recognition that ESD is much more process-oriented, without predefined or prescriptive measures. This fits with current literature on the subject. However, for education system leaders, there remains a concern around the goals or outcomes of ESD and the implications for the process of school-based education. This naturally swings back around to discussion of

curriculum reform, and hence, contents. Common themes in literature on the subject advocate a shift towards skills such as critical thinking, problem solving, planning and inquiry, with an additional emphasis on values education. What distinguishes ESD from other more generic articulations of ‘good education’ is an emphasis on systems thinking and a critical engagement with social and environmental issues.

These core issues have been broadly grasped but the crux comes in translating this understanding into ESD-related reforms. There comes a point when curriculum developers in countries like Guyana, Jamaica, Mauritius, Nauru and Tonga – which have taken up this task actively – need to confront the issue of how to reform curricula and what to include. Standards-based approaches, framed around KSAs (knowledge, skills and attitudes, with the latter tending to be poorly framed) are the dominant trend, which tends to narrow the idea of curriculum to the realm of content. While most curriculum developers have approached this task with the idea of mainstreaming ESD content, this approach receives criticism for ‘over-stuffing’ already full curricula, meaning that contents can only be treated superficially in classrooms, with shallow learning and no linking of learning and action. This issue is particularly problematic in science and social science syllabuses – where most ESD content gets folded in – and in the secondary grades. Cognisant of this problem, a number of reports have called for more integrated approaches, although the only example of this encountered in this study is from Jamaica’s thematically integrated grade 1–3 curriculum. In Mauritius, however, new curriculum documents have called for the ‘deloading’ of primary curricula, in order to allow for more participatory and integrated teaching approaches.

Reports indicate that when ESD-related content does find its way into classrooms, it is typically in the form of content knowledge, rather than opportunities for learners to critically engage with the topics to develop relevant skills such as critical thinking, collaborative problem solving, or even translating learning into action. When sustainability-related content is presented in this manner, it is unlikely to result in meaningful or transformative learning. There is concern that when environmentally-focused content is taught in an uncritical manner that fails to engage students, it can serve to further alienate them from environmental issues. This same concern also applies to other thematic areas of ESD that are being incorporated into curricula, including culture, health, citizenship and more recently, disaster preparedness, biodiversity and climate change. When important issues are presented in rote, the result in terms of students’ developing values and behaviours is unpredictable.

Bridging the gap: Many samples of curricula and ESD-related learning materials were reviewed in the course of this study and most have a sampling of appropriate ESD content, typically with an environmental or cultural emphasis. What tends to be lacking are complementary contents which help to round out well-developed concepts related to sustainability, relevant skills to empower students and reference to pedagogical approaches which bring these issues to life. There is, however, a broad recognition that ESD needs to be framed around a view of human development related to quality of life and grounded in local cultures. SIDS are distinguished by the fact that most have long histories of living sustainably within material resource constraints, and several initiatives have undertaken to develop an authentic formulation of ESD contents grounded in this heritage.

Tonga's draft curriculum framework (2009–2012), entitled *Quality Schooling for a Sustainable Future*, holds some promise in terms of its content orientation. The curriculum has five overarching themes which resonate well with ESD: Tongan culture and values; life skills; education for sustainable livelihoods; enterprise; and education for sustainable development. While the framework is divided into conventional subject areas, the themes are portrayed as cross-cutting, with emphasis that they should be readily apparent in the syllabus for each subject, and that they should be actively implemented through specific activities in teachers' guides and classroom activities. Furthermore, MoEWAC indicates that emphasis should be placed on the importance of inquiry (research) skills at all age levels, underscoring the importance of active, engaged learning.

One tool which could help to establish coherent and well-rounded ESD concepts, and one which has not been broadly utilised in the focus countries (with the possible exception of Papua New Guinea) is the Earth Charter. The Earth Charter is an international declaration of ethical principles for sustainability, launched in 2000, and recognised by UNESCO as an appropriate ethical framework for ESD (Jaminez 2011). The charter outlines principles that provide a robust foundation for sustainable development in terms of four areas: respect and care for the community of life; ecological integrity; social and economic justice; and democracy, non-violence and peace. While the Earth Charter itself does not describe learning outcomes, it provides a solid foundation on which individual countries can establish strong ESD programmes. The Earth Charter Initiative website provides links to a wealth of related educational resources and country-level initiatives related to it.¹

5.1.3 Gap: Prevailing lack of clarity around how to 'do' ESD and slow proliferation of whole school approaches

There appears to be a general recognition that ESD is not, at least not *only*, about any particular body of content. This is reflected in the emphasis on culture and values in many curriculum statements, as well as overarching policies statements of philosophy. However, apart from reference to student-centred and active learning approaches there appears to be relatively less clarity about how to accomplish the goals of ESD if not through content. A number of reports from the focus countries recommend more emphasis on 'whole school approaches'. However, there is little elaboration of what these entail. Part of the problem is that the very concepts of curriculum and teaching imply an emphasis on content – but ESD demands something more.

Strong formulations of 'teaching' ESD take the form of immersion, in which students' daily experiences at school are consistent with what they learn explicitly about sustainability and sustainable behaviours. This translates into a variety of school policies and initiatives in which sustainability is shown (not just said) to be important, and through which students have opportunities and experiences that help them internalise the importance of the issues and their own roles in addressing them. These 'whole school approaches' consider the various domains and dimensions of students' experiences, including explicit content, but also ranging from management and infrastructure to teaching approaches and role modelling, to daily routines and

reporting mechanisms. This creates an alignment between formal curricula (what is taught) and hidden curricula (what is learned tacitly). Together, these many factors reflect the institutionalised values and priorities of the school, and send a powerful message to students about what is important, what is expected and what is valued.

Jamaica's NEEC (*National Environmental Education Action Plan for Sustainable Development 1998–2010*) outlines this type of approach, stating that 'all staff and learners work to create a sustainable school culture – including classroom and schoolyard – and community' (NEEC 1997). Fourteen years after the drafting of this plan, the vision has yet to be fully embraced. However, a number of schools have incorporated ESD in a relatively comprehensive manner, including those involved with JET's School Environment Programme and the ASPnet Sandwatch programme. One Jamaican primary school reportedly achieved great results by implementing EESD (environmental ESD) into the core of school development planning, with positive impacts on student learning and improved literacy, numeracy, attendance and parent/community participation, in addition to improvements in staff development and the school's physical environment.

While most of the focus countries can provide a number of examples of schools or post-secondary institutions working concertedly to incorporate ESD principles school-wide, these are far from commonplace. What is more common, according to reports, are schools being run hierarchically and adult-centred classrooms dominated by rote individual learning, with some inclusion of concepts (knowledge) related to sustainability.

Bridging the gap: Different school systems are guided by different factors. In some, national curricula or standards provide a strong mandate that is closely followed. In others, textbooks or exams prescribe a de facto curriculum, often to the detriment of good pedagogy. In order for whole school ESD approaches to become widespread, there needs to be a perception that ESD is a system-wide priority. This means that rather than being simply injected into existing structures, it needs to be treated as a pillar or foundation. A number of countries are making good progress towards this goal. Similar to the Tongan example mentioned above, the Maldives MoE is taking steps towards such an approach, with the idea of 'using sustainable practices' presented as a key competency in the national curriculum, along with critical and creative thinking. This approach is backed up by a well-articulated curriculum document which details a progression of learning outcomes for sustainable development across all grade levels, under the headings of knowledge and understanding, skills and application and values and attitudes. This level of development suggests that the MoE is indeed serious about sustainability as a key competency. A selected range of values related to protecting the environment and heritage is also integrated into the curriculum. Reportedly, several schools have chosen to use the key competency 'using sustainable practices' as a whole school focus, around which school life is organised.

The Mauritius Ministry of Education and Human Resources (MoEHR) is incorporating relevant emphases through a different approach, where the language of sustainability and the environment is prominent throughout the national curriculum, including in overarching goal statements. Rather than standing as a key competency, sustainability

is incorporated throughout the curriculum document in all subject areas. The idea of *deloading* the primary curriculum mentioned above is also relevant here, as it creates space to support a transition to more participatory and engaging approaches to instruction, and to allow for more integration between subject areas during the most formative years of childhood, all of which is conducive to the practice of good ESD. Mauritius also has an established ‘green school’ concept, which involves co- and extra-curricular activities related to ESD, and there are plans for a new ‘eco school’ concept to be introduced shortly under the Maurice Ile Durable process.

5.1.4 Good practice: Teaching sustainability by practising sustainability

The idea of ‘learning by doing’ is an important aspect of good pedagogy, and is particularly relevant to ESD because of the necessary emphasis on the development of dispositions, values and applications that go well beyond knowledge acquisition. While much of the work being done in ESD takes place in conventional school classrooms where there are structural barriers to practising sustainability, Dominica’s Sustainable Living Initiative Centre (SLIC) is working hard to give learners direct experiences with sustainable living, *in addition to* teaching relevant skills and knowledge. SLIC is a registered NGO, operating alongside the Three Rivers Eco-Lodge in rural Dominica, and implements a broad range of ESD initiatives ranging from extended programmes for university students, to day-long sessions for school-aged children, to community education programmes on a number of topics related to renewable energy and sustainable living. In addition, SLIC also has a number of community-oriented programmes, including one which has provided over 400 computers to local schools, and works with communities to supply electricity through renewable sources. SLIC emphasises skill development through first-hand experience, and the centre itself is entirely off-grid with the exception of its telephone line. Using relatively simple technologies, electricity is provided by solar and wind power and meals are prepared from food grown in an organic garden. The site is equipped with composting sanitary facilities, and water comes from a nearby creek with the help of a solar pump.

A second organisation, which applies ‘learning by doing’ in quite a different manner, is the Sandwatch Foundation mentioned above. The Sandwatch programme aims to help students learn about relevant local environmental issues, to seek out real information and to act on that information. The methodology is summarised by the acronym MAST – monitoring the environment, analysing the results, sharing the results and findings, and taking action (Sandwatch 2011). In this manner, students involved in the programmes are enacting sustainable practices and learning throughout the process of experience.

Extending the good work: Operating outside of the formal education system affords SLIC considerable freedom in its programming and operations. However, it also demonstrates the viability of an approach to ESD that is not reliant on external or public funding. While SLIC is not a school, it exemplifies the potential of ‘whole school approaches’ to ESD. There is considerable space for a middle road in which mainstream schools begin to adopt more sustainable practices and give students real experiences with sustainable living. While a number of schools across the focus

countries have begun to embrace sustainable practices with environment programmes, clubs and school-wide programmes for composting and recycling, much more could be achieved if a concerted focus were placed on learning by doing.

5.2 Material/physical/places

5.2.1 Good practice: Increasing emphasis on the role of physical environments in learning

While whole school approaches to ESD are discussed in the preceding section, physical learning environments warrant a special mention. Conventional educational approaches view the physical environment – school, classroom, schoolyard etc. – in functional terms. That is to say, they exist merely to support the learning of content. In ESD, however, the physical learning environment is taken to be a part of the learning experience and provides important lessons of its own to students about their relationship with the physical world. This physical environment includes not only school buildings, but also the furniture, classroom spaces and organisation, equipment, books and other objects, as well as the visual element, which together comprise a kind of silent curriculum that is not learned through language, but rather through observation and acclimatisation. Students interacting with this physical environment are learning about their role in caring for their environment, as well as expected behaviours in relation to the physical world. The boundaries of the physical environment also establish understanding about what learning is and where it should take place.

While whole school approaches often have a more institutional focus and may not attend with such care to physical contexts of learning, most of the examples reviewed of green school-type initiatives have sought to reorient at least some aspects of the physical environment to serve sustainability-related learning. While commonplace examples like awareness-raising posters may have limited impact, a number of reported initiatives more directly engage students in activity in relation to their environment, including rainwater collection, composting and waste separation sites, as well as schoolyard initiatives in which students are involved in caring for plants and facilities on the school site. This side of learning is foregrounded at the SLIC in Dominica, where the entire site provides a working demonstration of sustainable equipment and practices, which learners interact with. Everything from building design and orientation to equipment and material reflect sustainable values. In an innovative example from Samoa, a private sector company has co-operated with schools in waste separation initiatives, salvaging plastic bottles and processing them into robust outdoor furniture, which is delivered back to the schools.

A number of strong examples come from Jamaica, where JET's School Environment Programme has been working with schools to implement greening initiatives for more than a decade. While their work was environmentally motivated, it also resulted in more attractive campuses. Anecdotally, there is indication that the children involved in caring for their environments developed a sense of ownership and pride in their schools and a sense of responsibility. Through complementary

programmes such as Sandwatch and environment-oriented special events, students extend this civic orientation beyond school walls, and begin to generalise a sense of responsibility and care for the natural environment in the surrounding community. Similar programmes have also been conducted in teachers' colleges. Under the Sustainable Teacher Environmental Education Project (STEEP) in Jamaica, two teachers' colleges implemented whole college ESD approaches with significant physical elements, including environmental audits on buildings, monitoring of resource use, and the construction of naturalised teaching areas including a pond, a butterfly garden and bird watching sites. These activities all help to cultivate a sense of awareness, appreciation and intentionality in the student-environment relationship.

Extending the good work: Ideas around green school architecture and schoolyard naturalisation have not yet gained broad traction in the focus countries. While many schools may have introduced some activities which build on learning opportunities provided by the physical environment, there are few example of schools which have sought to establish truly sustainable campuses. It should also be noted that often these good practices are initiated by adults rather than through students' initiatives, resulting in lack of real ownership or engagement. Furthermore, many of the initiatives undertaken to improve school grounds are reportedly initiated for aesthetic rather than educational reasons. There is no evidence of sustainable principles (energy efficiency etc.) being incorporated into standards for school buildings, and in a number of countries, there is no evidence of such standards at all. For physical safety as well as sustainability learning, this is an area in which policies should be reviewed and reinforced. Existing programmes that already have broad traction, such as UNICEF's child-friendly schools and other rights-based approaches, could potentially be broadened to include green principles – especially with the understanding that children's rights extend into the future, thus providing a rational basis for sustainability within a rights context. There is also some basis to the argument that caring for one another and caring for the environment are interrelated – there is a growing body of academic literature which links social justice and environmental sustainability as two expressions of the same fundamental value (Bookchin 1996; Kellner et al. 2009; Kahn 2010).

There is an additional opportunity related to physical school environments that comes disguised as a challenge. While the relative scarcity of resources in many SIDS schools, particularly in rural contexts, means a special set of pedagogical challenges not faced by better-resourced schools, this situation also dramatically reduces the ecological or carbon footprint² of these schools. Wealthy urban schools tend to be relatively wasteful of resources, conditioning their students to wasteful patterns of behaviour. Challenges notwithstanding, in terms of ESD, there is scope to build on the less consumptive nature of rural schools as a point of pride. While this study did not find evidence of this type of analysis being undertaken in the focus countries, there are a number of tools available to do so. The State Government of Victoria (Australia), for example, has developed quite a rigorous online calculator tool for schools to measure their ecological footprints (EPA Victoria undated). If such

calculations were measured and compared at the country level, it would provide an incentive for schools to take their consumption and waste production seriously. In this context, the use of renewable power sources and other school-based conservation activities could begin to take on new importance, creating additional opportunities for students to develop a strong sense of environmental responsibility.

5.2.2 Gap: Many of the available ESD resource materials are not being used in classrooms

The available information indicates that while a great deal has been invested in the development of resource materials for ESD, too often these materials either fail to make it into classrooms or simply do not get used. The development of resource materials on ESD is an attractive activity for donors and CSOs for a variety of reasons, including theoretically broad distribution and value, but in practice this has proven inefficient. Regional approaches related to resource materials are being rethought because while there remains a serious need for quality ESD materials at the school level, most of those developed in the past are underutilised. A variety of reasons were reported:

- Regionally-developed resources are shipped to central offices, but not distributed to schools;
- Regionally-developed resources lack specifics related to local contexts which would make them more relevant;
- The materials, including teachers' guides, are too difficult for the background level of the teachers – they are not teacher-friendly;
- Teachers understand the content but lack the confidence to implement activities in the manner described;
- Teachers are unwilling to commit the time required to understand the materials, particularly if they are produced in English in countries where this is not the mother tongue;
- Content is not sufficiently linked to curriculum objectives, or is perceived to be of limited academic value in relation to exam-oriented priorities;
- The resources are produced in insufficient quantities, and are not reprinted for new teachers;
- Lack of associated assessments, meaning there is little incentive for teachers to work with them.

Bridging the gap: Over time, it has become clear that without complementary training for teachers on how to use them, the development of ESD materials is usually fruitless. Corresponding to the challenges above, it has also become clear that there is a need to link resources to local curricula, incorporate local content, provide sufficient background for teachers (beginning with fundamental concepts), and have them available in teachers' mother tongues. In addition, UNESCO (Apia) has indicated

that there tends to be better usage of ESD materials when they are developed as part of a larger curriculum development process, suggesting the importance of aligning the work with MoE planning cycles.

JET is but one example of an organisation applying many of these principles. In addition to working towards 'Jamaicanising' regional ESD, the organisation also conducts school visits in order to distribute directly and follow up on materials, as well as providing training to teachers on how the materials can be used. National governments are also getting involved in such activities. The Maldives MoE has produced and distributed a number of curriculum-linked and teacher-friendly resource materials on environmental education and related science content. These materials include flipcharts depicting good environmental practices in terms of biodiversity, energy, waste and water, as well as teacher resource packs and resources on school-level best practices.

5.3 Institutional/foundational

Table 5.1 Line ministries – what's in a name?

Country	Environment	Education
Dominica	Ministry of Environment, Natural Resources, Physical Planning and Fisheries	Ministry of Education and Human Resource Development
Guyana	Ministry of Natural Resources and the Environment*	Ministry of Education
Jamaica	Ministry of Water, Land, Environment and Climate Change	Ministry of Education, Youth and Culture
Maldives	Ministry of Housing and Environment	Ministry of Education
Mauritius	Ministry of Environment and Sustainable Development	Ministry of Education and Human Resources
Nauru	Department of Commerce, Industry and Environment	Department of Education
Papua New Guinea	Department of Environment and Conservation	Department of Education
Samoa	Ministry of Natural Resources and Environment	Ministry of Education, Sports and Culture
Solomon Islands	Ministry of Environment, Conservation and Meteorology	Ministry of Education and Human Resources Development
Tonga	Ministry of Environment and Climate Change	Ministry of Education, Women's Affairs and Culture Ministry of Training , Employment, Youth and Sport**

* Established 2011.

** Established 2006.

5.3.1 Gap: Lack of standards and general policy coherence around ESD

The best policies are ones that have a realistic chance of being implemented. For this to happen, barriers to implementation need to be considered, such as: lack of clarity due to ineffective communication; mixed messages due to lack of corresponding changes elsewhere in the system; and lack of resources or capacity to carry out the policy. While high level policies – such as a national plan – can go a long way towards creating clarity and consistency, even countries with such policies focused on sustainable development have noted that fragmented implementation has led to inefficiency, non-achievement of targets and duplication of efforts. In reality, most countries have some policies that either advocate or provide entry points for ESD, and others that make no reference to it. This creates an incoherent policy environment in which mixed messages stifle or frustrate efforts to implement ESD. While a number of focus countries make strong reference to ESD in their policies, there is no evidence that any has developed relevant educational standards. Without clear standards to organise policy and programming, there is little to scaffold coherent planning, resource mobilisation, curriculum work, or implementation.

One of the earliest countries to adopt an institutional infrastructure for ESD was Jamaica. Beginning in the early 1990s, an environmental dimension was integrated into many subject curricula at all levels of the system, with complementary development of resource materials, and inclusion of the environment and environmental issues in student examinations. In 1993 a National Environmental Education Committee (NEEC) was established, which then spearheaded the development of a National Environmental Education Action Plan for Sustainable Development in 1998 – when ESD globally was still in its infancy. This action plan addressed both formal and non-formal education, and identified key partners such as the Ministry of Education, Youth and Culture (MoEYC) and the Joint Board of Teacher Education (JBTE). As could be anticipated, a thriving civil society community developed offering complementary environmental education and ESD activities in parallel and in collaboration with the MoEYC system. However, sources indicate that the action plan was tied to external funding and was never fully implemented. The administrative home of the NEEC is under the Environmental Protection Agency, rather than the MoEYC. Furthermore, the NEEC website identifies more than 40 offices and individuals represented in the committee. While interministerial and interdepartmental collaboration is important, the evidence suggests that a new layer of bureaucracy was established. Not surprisingly, despite some successes like the development of the action plan, reports indicate that policy alignment remained problematic, even between those who should theoretically have a shared vision, such as the JBTE and the MoEYC.

Bridging the gap: ESD has the potential to serve as a strong unifying theme in education, as the concept builds on good educational practices and integrates ideas related to social and economic development, culture, health, equity and social justice, citizenship and environmental sustainability. However, consistency between substantive and procedural policies is important to the implementation of any educational reform, including ESD. Certification requirements cannot be effectively changed without adjustments to training programmes. School greening necessitates an infrastructure to support it. Changes to curriculum will not take root unless books and examinations also change. Consideration should be given to all institutionalised aspects of the education

system, including: teacher certification; promotional systems; curriculum revision; textbooks and resource materials; examinations and student reporting; monitoring and reporting within the system; standards related to school buildings and their physical environment; leadership and supervision guidelines etc. Reorienting the many aspects of the system towards ESD requires well-formulated and coherent high level policies, as well as resources and strategic planning in order to put those policies into practice.

5.3.2 Gap: Lack of time and other resources to focus on ESD despite prioritisation in principle

Issues related to ESD implementation are not limited to lack of training or coherent policy environments. The broader enabling environment in most SIDS, and developing countries in general, is characterised by a variety of constraints at the individual, organisational and system levels (see UNESCO 2009; IALEI 2009; Deo 2007). As it was put in one country; ‘The major challenge for [ESD] in the formal education system is to build capacity of all sectors of education communities to clarify values, critically reflect, negotiate and implement action plans ...’ (Collins-Figueroa et al. 2005). This challenge is ongoing. Thus, even in cases of committed individuals, schools, or governments, the challenges to implementing ESD are immense due to constraints in the broader systems within which those players must act.

Bridging the gap: The most constructive way of facing the challenge of resource constraints is in an integrative manner. As discussed elsewhere, quality ESD has a great deal in common with quality education in a more general sense, and in the current global context there is a growing imperative to prioritise sustainability in education systems. This imperative is acute in the case of SIDS – the countries most vulnerable to the impacts of climate change. This recognition is growing in the SIDS community, and is well represented by the case of Mauritius. The Maurice Ile Durable (MID) concept aims to position Mauritius as a global leader in sustainable development, and despite constraints facing its education, has incorporated ESD into the core values of new curricula and educational policies – not as an additional burden to the system, but as a central tenet of what education is expected to deliver. The evidence from the activities of the multi-stakeholder MID education working group, and achievements to date, suggest that steps are being taken to roll out this high level policy in a systematic manner.

5.3.3 Gap: Emphasis on issues related to social justice, gender equality, or the rights of marginalised groups

In terms of general reforms, most of the focus countries have been working towards modernisation of their education systems through the introduction of standards-based curricula and other quality related measures, as well as working to improve efficiencies within the systems themselves. With respect to ESD, emphases vary more from country to country, with a general trend towards a more culturally-oriented approach in the Pacific and a more biodiversity and environment-dominated concept in the Caribbean. An area that seems to be rather neglected in most country-level policies, and particularly those discussing ESD, is the cluster of equity, social justice and the rights of marginalised groups. Few countries have up-to-date gender equality strategies,

or specialised policies on inclusion for children excluded from mainstream educational opportunities whether by disability, extreme poverty, or other rights-related issues. In the broader context of sustainability, these issues matter as part of a rights-based social sector approach, as well as a balanced approach to sustainability that recognises the interrelationship between social, environmental and economic issues.

Bridging the gap: While the ten focus countries vary quite dramatically in the issues they face with respect to social justice, all are confronted with educational inequalities, and all face access-related issues for certain marginalised groups. Nonetheless, a number of countries have taken steps to address these issues – if not in ESD agendas then through broader educational reforms. For example, while Solomon Islands does not have a focused strategy related to ESD, and environmental education receives relatively little consideration in its Education Strategic Framework (2007–2015), issues of access and equity are extremely prominent. It is also worth noting that while the Pacific ESD Framework and Pacific ESD Action Plan make almost no mention of equity, the broader Pacific Education Development Framework refers to equity throughout. However, it is the inclusion of social dimensions within concepts of ESD to which this finding relates. One country building a more integrated concept is Tonga, which, through its draft curriculum framework, has paid special attention to issues of inclusion, gender equality and children with disabilities. These themes are far less prominent in its overarching policy framework, causing some concern that essential resources may not be secured to support the intentions outlined in the curriculum. As concepts of ESD, as well as policy examples, continue to evolve, it will be important to reflect periodically on how these policies align with the ideals which educational systems are striving to uphold.

‘... when the knowledge system in the curriculum and the pedagogical frameworks are in concurrence with the educational need of the country then issues of equity, access, and relevancy are addressed.’ (Fua 2009: 2)

5.4 Social/cultural

5.4.1 Good practice: Recognising the importance of language in ESD

While we intuitively recognise the importance of language, the role of language in the deep structure of our thinking is often taken for granted. From an environmental perspective, learning accurate terminology links to the understanding of sophisticated concepts; for example, words like ‘away’, as in ‘throw that away’, are problematic because they distance us from the consequences of our actions, thereby reducing our sense of responsibility and obscuring issues related to waste management. From an anthropological and sociological perspective, language functions as a kind of cultural DNA that encodes the underpinning architecture of our worldviews, and embeds both epistemological and axiological assumptions and perspectives in our thinking without us ever realising it. In more practical terms, teachers are often most confident and capable when working in their mother tongues.

It is significant, then, that there is a growing recognition of the role of language in sustainability thinking in the focus countries. As one representative from the MoE of Mauritius indicated, there is a ‘need for widespread use of the language of the

environment to transmit values and bring change in mind set.’ In the Pacific, the recognition of the relationship between language and local knowledge systems has been well established, and strong entry points for locally-relevant ESD conceptualisations have been recognised. In Tongan, for instance, the concept rendered in English as ‘poverty’ is transformed from an economic idea to a behavioural idea with an emphasis on social capital, and the inherent dualism implied by the terms in English of *self* and *land* (or *person* and *environment*) begin to erode – suggesting that what is good for the land is good for the person. The Tonga MoEWAC has taken the role of language seriously, developing the Tonga Education Lakalaka Policy Framework, which lays out policy directions and guidelines in relation to key elements identified through the *lakalaka* metaphor – based on rich cultural meanings embedded in a traditional form of dance.

Extending the good work: As recognition of the significance of language to ESD continues to grow, so will related research and applications. There is already a sound body of literature emerging from USP and scholars in the Pacific community linking language, local knowledge systems and implications for sustainable development. The Kakala Research Framework described elsewhere is but one example. In addition, environmental aspects of sustainability should be further complemented with cultural and literary aspects. At the UWI, graduate coursework has been offered on literature and sustainability. Rigorous approaches to literary analysis will continue to develop this aspect of ESD, leading to new practical applications in classrooms and communities.

5.4.2 Good practice: Building ESD out from the core of local culture

Strong sustainability acknowledges resource constraints and the limits of technological innovations to solve social and environmental problems, as well as the interconnectedness of human issues with those of the environment and economic relations. These themes tend to be present in most longstanding cultures, and island nations are inherently aware of such constraints and connections. In many SIDS there is also a sense of cultural pride and interest in the preservation of tangible and intangible cultural heritage. Recognising this, effective ESD is being undertaken which builds on local cultural foundations to establish leading edge concepts of sustainability. Such work begins with a foundation in traditional values and practices, but with a healthy recognition that not all traditional practices are necessarily sustainable. Contemporary research and scientific knowledge gain new traction and relevance when they are presented in relation to deeply-held understandings and ways of life. Working from traditional norms, concepts and taboos – many of which can be reinforced through contemporary scientific understandings – can be an effective means of gaining support for sustainability-related issues. A well-known example of this from the Pacific is Ra’ui, a traditional conservation system that prohibits access to allow the rejuvenation of natural resources (Hoffman 2002). This approach designates certain areas as protected, either prohibiting or restricting the harvest of marine life.

Grounding national ESD agendas in cultural foundations can be challenging in the context of cultural pluralism. While there is a tendency to group countries together within a shared regional context and commonalities, it is also important to recognise the rich diversity of groups even within a single country, and the value which that diversity brings to the social fabric. As one of the most culturally diverse countries

on the planet – consisting of more than 800 language groups – Papua New Guinea provides a useful example in this regard. With a recognition of the linkage between culture and sustainability, Papua New Guinea was among the early parties to the Earth Charter, with the country's 870 tribes affirming their support of the Mama Graun Tribal Charter – a distinct declaration on sustainability, based on the Earth Charter. PNG remains one of the few SIDS with an active Earth Charter Youth Committee, which is involved in community work, as well as training and awareness-raising for youth on sustainability issues. More recently, PNG ratified the 2008 UNESCO-led Intangible Cultural Heritage Convention, and has undertaken a number of activities to safeguard this unique national asset.

Extending the good work: Outside of the Pacific, much of the work being done in reorienting education systems towards ESD, and particularly curriculum reform, is emphasising environmental aspects of ESD. The tendency has been towards inclusion of related content within science curricula, with relatively little connection to cultural aspects of sustainability. The numerous examples from the Pacific suggest that cultural approaches emphasising sustainable livelihoods and building on traditional knowledge systems can be viable.

A UNESCO-supported initiative in 2009 reviewed ESD-related policies from a number of countries, including Jamaica, in relation to cultural diversity and intercultural understanding criteria (see Tilbury and Mula 2009). A review of the findings of this study in relation to evidence from the SIDS focus countries, presented in Table 5.2 below, suggests that many of these focus countries are doing relatively well in strengthening ESD through cultural perspectives. Of particular note, one of the key findings of the UNESCO study was 'culture seen as a challenge rather than an opportunity to move closer to sustainability' (Tilbury and Mula 2009: 22). The evidence from the SIDS countries, particularly those in the Pacific but also in Guyana, runs quite contrary to this finding.

Table 5.2 Key findings of UNESCO review of ESD policies from a cultural perspective, and related evidence from SIDS focus countries

No.	Key findings of UNESCO report	Policy and practice evidence from the SIDS focus countries
1	Culture is interpreted essentially as cultural heritage.	Culture in relation to ESD is framed as a recognition of the inherent sustainability of many traditional approaches, but with a balanced outlook also informed by outside epistemologies.
2	Cultural diversity is valued mostly within a context of indigenous knowledge.	The emphasis appears to be on commonalities, shared context and mutual responsibility.
3	ESD policies see culture as static.	Culture and knowledge are not viewed as static, but cultural heritage is portrayed somewhat more concretely.

Table 5.2 (Continued)

No.	Key findings of UNESCO report	Policy and practice evidence from the SIDS focus countries
4	Intercultural dialogue is acknowledged, but rarely promoted explicitly in ESD policies.	(Not particularly relevant to the policies reviewed.)
5	Culture seen as a challenge rather than an opportunity to move closer to sustainability.	Quite the opposite: numerous cultural entry points have been identified for ESD, and this is often cited as a success factor – particularly in the Pacific.
6	Links between language (as a means of cultural expression and communication) and sustainable development are yet to be acknowledged.	As above, particularly in the Pacific, the special nuances of local terms and concepts are used to articulate locally relevant concepts related to sustainability.
7	The complementarities between indigenous knowledge and scientific learning systems are not explored.	These tend to be viewed as complementary, as illustrated by the Kakala Research Framework in the Pacific, as well as the environmental management philosophy articulated by Iwokrama Centre in Guyana.
8	Creativity is underplayed in sustainable development.	Creativity is advocated in many of the policy documents reviewed, and in both the Pacific and the Caribbean, there is strong evidence of the use of theatre and visual arts in ESD activities.
9	There are missed opportunities through not embedding culture components within ESD learning objectives.	This is probably the case, as more could always be done; however, curriculum documents make frequent mention of cultural components as objectives and themes to guide teaching – particularly in the Pacific.
10	Few policies see the relevance of culture to pedagogy or how it can add value to ESD approaches.	This area is relatively new, and rote learning reportedly still dominates. Policies tend to advocate a shift towards student-centred methods with no reference to culture. Cultural approaches to knowledge generation, research and learning are beginning to be explored. Examples include approaches such as <i>talanoa</i> , which are being revitalised in Pacific countries.
11	Culture stakeholders and interest groups have fewer participation spaces during the development, implementation and evaluation of ESD policies than dominant stakeholder groups.	(No data.)
12	Culture has been partially embedded in discrete parts of the ESD policies and strategic documents reviewed.	Culture is very prominent in policies and strategic documents from the Pacific, and to a somewhat lesser extent in those from the Caribbean and AIMS regions.

Notes

- 1 See: www.earthcharterinaction.org/content
- 2 An ecological footprint is a calculation of the area of productive land required to supply the required resources and assimilate the associated wastes.

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Chapter 6

System Management

6.1 International and regional

6.1.1 Good practice: Documentation and participation in ESD activities at the regional level

There is no doubt that the UNDESD, with UNESCO as the lead agency, has elevated the profile of ESD to a level of unprecedented significance. Including work produced by central and cluster offices, UNESCO has produced thousands of pages of documentation and hosted countless hours of workshops to support regions, countries, institutions and even individual teachers in the implementation of the UNDESD. This work has included not only the establishment of fundamental frameworks to support implementation, but also resource materials for those involved directly in the implementation, as well as numerous publications cataloguing and elaborating on best practices in ESD in relation to teacher education (UNESCO 2007; Cambers et al. 2008), the application of the Earth Charter (Earth Charter International 2007) and in the Pacific (ACCU-UNESCO 2007). This work has effectively positioned ESD on the global agenda for education reform, alongside longstanding priorities such as literacy and gender equality, leading other international organisations without explicit environment-related agendas to focus on ESD as a priority as well.

While the preceding comments deal mostly with global and regional initiatives, these initiatives would not have been possible without the support and participation of the involved countries. Table 6.1 below seems to suggest that formal commitments on the part of the focus country governments have been the exception rather than the norm. However, the evidence at the more granular level of regional activities is much more positive. There appears to be quite a high level of participation in regional activities, with most of the focus countries represented in the participant lists of the many workshop and seminar reports. The number of such activities, and the level of participation, is particularly high in the Pacific region.

Extending the good work: Despite participation, engagement and even commitment at the regional level, on-the-ground implementation and results achievement are proceeding steadily at best in the focus countries. Several of the country-based sources consulted commented that despite funds, profile and activities related to ESD, the work has produced few tangible results. This comment reflects, in part, the challenges related to determining what constitutes *results* in ESD, and how these can be measured, and reinforces the earlier suggestion that there continues to be a need for more research on ESD. However, there also appears to be sense of anxiety that the available resources could all be exhausted in deliberation, rather than implementation. In the Pacific, a great deal of time and energy went into the development of regional frameworks and guidelines for national ESD indicators, followed by the development

Table 6.1 Participation of focus countries in international ESD initiatives

	Jamaica	Dominica	Guyana	Maldives	Mauritius	Samoa	Tonga	PNG	Solomon Islands	Nauru
Main teacher education institute involved in international network*	Yes									
Formal endorsement or official launch of the DESD**	Yes						Yes			
Completed 2009 or 2011 ESD surveys (UNESCO)*	Yes						Yes			
Endorsement of regional agreements***	Yes	Yes	Yes	N/A	N/A	Yes	Yes	Yes	Yes	Yes

* Information provided by UNDESD Secretariat.

** Information from several sources, including country mapping reports and UNESCO 2007.

*** Such as the Tortola Declaration (Caribbean) and the Pacific ESD Framework (Pacific).

of the indicators themselves, but this exercise has reportedly not resulted in effective results-oriented monitoring. One of the lessons learned was that it directed finite and financial resources away from the *implementation* of ESD itself. In the Caribbean, similarly, there is evidence of interest in the establishment of localised ESD indicators, with a number of workshops and presentations having focused on this topic, although this work is ongoing, and a number of challenges remain (Collins-Figueroa 2011).

This experience underscores the challenge of describing progress in a field which is highly process-oriented, and of assessing learning outcomes which are not only content based. There appears to be a tacit consensus about the importance of goals and indicators, yet it remains challenging to describe ESD in these terms. As the next few years will see the end of a number of internationally agreed goals (IAGs) such as Education for All and the Millennium Development Goals, as well as the UNDESD, there will be an opportunity to revisit these experiences with a view to establishing clear and tangible goals for the next round of IAGs, along with indicators which adequately describe what the goals intend to achieve.

6.1.2 Gap: Lack of effective regional co-ordination on ESD implementation

One of the common claims from those involved with ESD in multiple countries is the importance of working regionally in order to provide co-ordinated support and share lessons learned across countries. This makes sense in light of limited resources as well as common themes within each region in terms of context, entry points and constraints. There is an excellent track record of co-operation between island states on relevant issues, as well as a wealth of organisations and structures in place to facilitate co-ordination. While there appears to be a gap in effective co-ordination on ESD implementation, the text box below suggests that this gap, at least in the Pacific and Caribbean, is not attributable to lack of relevant co-ordinating entities. Rather, what appears to be the case is that there has been a lack of leadership and collaboration

between the various co-ordinating bodies. Different groups have assumed differing roles on an ad hoc basis, according to their own mandates, resulting in fragmented implementation. Having said this, the cases of the three regions are quite different.

Relevant co-ordination bodies and support networks:

- Alliance of Small Island States (AOSIS)
- Caribbean Community (CARICOM)
- Caribbean Examinations Council (CXC)
- Caribbean Network of Teacher Educators
- Global Islands Partnership (GLISPA)
- Global University Network for Innovation
- Global Universities Partnership on Environment and Sustainability (GUPES)
- International Network of Teacher Education Institutes (associated with UNDESD)
- MESCA group
- Network of Institutes for Sustainable Development (NISD)
- Organisation of Eastern Caribbean States (OECS)
- Pacific Islands Forum
- Pacific Network of Island Universities (EDULINK project)
- Secretariat of the Pacific Community
- Secretariat of the Pacific Regional Environment Programme
- SIDSnet
- UNESCO Associated Schools Project

In the Pacific, a great deal of effort has gone into regional co-ordination. Co-ordination activities have benefited from institutional infrastructure like that provided by the Pacific Islands Forum Secretariat, and the support of UNESCO and other organisations such as the Secretariat of the Pacific Regional Environmental Programme (SPREP), the Secretariat of the Pacific Community and the University of the South Pacific (USP), among others. The USP's Pacific Centre for Environment and Sustainable Development (PACE-SD) has taken on a lead role, having been designated as the co-ordinating body for both the regional ESD strategy and action plan. However, due to changes in leadership and other factors, this co-ordination role has reportedly been largely unfilled, and with the exception of a few activities, the action plan has not been implemented. Furthermore, as an environment-oriented department, PACE-SD has recently focused more on climate change activities, leaving the role of ESD co-ordination largely to the stakeholders more directly involved.

Unlike the Pacific community, regional co-ordination activities in the Caribbean and AIMS regions have been decidedly less. In the AIMS region, this review did

not obtain any evidence of regional co-ordination activities focused on ESD. In the Caribbean, there have been a number of regional workshops and seminars, supported by UNESCO's Kingston office, UNEP and the Cropper Foundation, among others. Activities included a regional launch of the UNDESD in Jamaica; however, to date, no regional plans or strategies have been developed. Despite the commitment of a common core of individuals from a number of countries, ESD initiatives have been undertaken mainly on an ad hoc basis, without a broader implementation scheme to support a results chain or consistent follow-up. The Cropper Foundation, for its part, has been helping to resolve this issue, and appears to be becoming a focal organisation on ESD activities in the Caribbean. The organisation has taken the initiative on a number of regional activities in recent years, including a 2011 regional workshop on ESD, hosted by the Cropper Foundation with the support of UNESCO. The workshop was well attended and brought together a wide range of specialists to share approaches and expertise. While there continues to be engagement and leadership from a number of individuals and organisations, reports have indicated the need for stronger commitment at the institution and government levels. The University of the West Indies, as a regional institution with campuses in several countries, has played an informal role in co-ordinating a number of activities and sharing lessons between countries. However, this too has been largely on an ad hoc or per project basis.

Bridging the gap: Most information sources have noted that co-ordination, both regionally and nationally, has been inadequate. The most common recommendations relate to the appointment of stable focal points, and most often the recommendation is that these be associated with regional and/or national universities. While changes in leadership at PACE– SD have been used to explain the relative lack of regional co-ordination in the Pacific, it is notable that USP's School of Education and Institute of Education have picked up much of this role. In addition, other organisations like the UNESCO Apia Office and SPREP have also played de facto co-ordination roles on various initiatives. It is notable, however, that in the Caribbean and AIMS regions, which lack regional ESD plans of any kind and which have much less active co-ordination bodies, ESD work has also progressed relatively well at the country level owing to a number of active CSOs and donor-supported projects. This raises some questions about the return on investment of regional co-ordination activities. This aspect of ESD implementation warrants further exploration. The situation remains dynamic, with new initiatives being explored each year. One promising initiative in the Caribbean, supported by UNESCO and The Cropper Foundation, is the development of an online portal for ESD in the region, which will consist of a website and clearing house for research and data on ESD in the region, as well as an online discussion forum to facilitate co-ordination and exchange of expertise. This type of decentralised approach may support an efficient way forward for collaboration and co-ordination.

6.1.3 Gap: Need for more strategic and streamlined approaches to regional planning

The importance of internationally agreed goals, as well as regional planning, is generally well recognised. However, the layering of plans, frameworks, strategies

and other agreements, along with the tendency for these to lack strategic and results-oriented approaches, creates a challenging environment to work in at the national level. A 2009 review of progress on the implementation of the action plan associated with the Pacific ESD Framework is illustrative, noting that in addition to complementing the Pacific Plan, the action plan also complements other regional and international initiatives including the MDGs, EFA, the UN Decade for Literacy, the Forum Basic Education Plan, the Secretariat of the Pacific Regional Environment Programme (SPREP) Education and Communication Guiding Framework, and the Pacific Youth Strategy – identifying eight guiding frameworks in a single sentence. While in many ways complementary, the sheer number of guiding documents can easily pull attention away from the real work of implementation, and have the potential to create unnecessary confusion and administrative work. This list is in fact just a beginning – the box below presents additional initiatives relevant to the three regions. In addition to such initiatives, most SIDS also rely on donor-funded projects – many of which span several countries, requiring additional administration and co-ordination. While there tends to be consistency and complementarity between such initiatives, the administrative burden at the top is quite heavy, even before national plans are considered.

Applicable guiding frameworks:

- Action Plan for Implementation of ESD in the Pacific Islands (2008–2014)
- Action Plan for Implementing the PESDF (2008–2014)
- Barbados Programme of Action (BPoA) (1994)
- Bonn Declaration on ESD (2009)
- Earth Charter (2000)
- Education for All (1990–2015)
- Intangible Cultural Heritage Convention (2008)
- Mauritius Strategy for the Further Implementation of the BPoA (2005)
- Millennium Development Goals (2000–2015)
- Nassau Recommendations for Climate Change Education for Sustainable Development (2011)
- Pacific Culture and Education Strategy (2010–2015)
- Pacific ESD Framework (PESDF) (2006)
- Pacific Plan (2005)
- Pacific Youth Strategy (2000–2010)
- Secretariat of the Pacific Regional Environment Programme Education and Communication Guiding Framework
- Tokyo Declaration of HOPE (Holistic, Ownership-based, Participatory, Empowering) (2009)

- Tortola Declaration on Climate Change Education for Sustainable Development (2011)
- Traditional Knowledge Action Plan (2009)
- UN Decade of ESD (2005–2014)
- UN Literacy Decade (2003–2012)

Bridging the gap: Over the past several years, there has been considerable reflection on the need to streamline planning frameworks at all levels. As early as 2005, UNESCO was working to promote the linkages between global education initiatives. As we are now in the final years of many of the current IAGs, discussions are beginning about what will replace them, presenting an opportunity for a more unified approach. At regional levels, this will also present an opportunity to revisit other competing agendas with a possibility of weaving them together into a more coherent approach. While there is value in identifying goals and strategies in particular areas, the textbox above provides an illustration of how this approach can result in a diffusion of priorities, which could make it a challenge to concerted follow up on each individual strategy, framework and action plan.

A UNDESD review from UNESCO (2012) found that ESD is emerging as a unifying theme for many types of education that focus on different but related priority areas. Because ESD takes into account not only good basic education, but also other priority themes related to environmental protection and social and economic development, it has the potential to pull together a number of different interests under a common banner. This is not to suggest that ESD alone should supplant other educational agendas, but rather that education which embraces sustainability as a core value has the potential to help align a variety of diffuse educational agendas related to issues of global importance. Furthermore, many of these issues – including sustainability as well as many others such as peace, tolerance and social justice – will not be solved by improved teaching of knowledge and skills alone. Because ESD recognises the need for behavioural and dispositional change, and not just the learning of knowledge and skills, it has an important contribution to make to the way that *education* itself is envisaged in the next round of IAGs. What has been learned through ESD implementation around the importance of students’ experiential learning, policy alignment, whole school approaches, pedagogy etc. suggests the need for a comprehensive perspective, which will provide policy guidance in all of these areas.

6.1.4 Good practice: Balancing regional funding with country-level interventions

Given the importance of local contextualisation in ESD, as well as the limited resources available to support educational programming, one of the positive trends observed is the move towards balancing regional funding and programming with support to country level interventions owned and led by different SIDS. This phenomenon is increasingly apparent in the Pacific, where organisations like UNESCO and NZAid have contributed to supporting the development of regional frameworks and strategies, as well as supporting a number of successful local initiatives. This approach represents

a shift away from more regionally-oriented approaches, as well as ‘one size fits all’ programmes.

From a donor or multilateral perspective, there are efficiencies to working at the regional level to support SIDS. With a number of common concerns and contextual factors, it is practical to support regional organisations in order to contribute to a number of countries. However, individual countries often lack the institutional capacity, resources, or political will to translate generalised frameworks into national strategies or action plans. Many such frameworks depend on outside funding for their implementation, which is typically not secure at the time the frameworks are being developed. Based on experiences early in the UNDESD, UNESCO has adjusted its strategy for supporting ESD in the Pacific. The organisation has worked with seven national governments to conduct ESD sector-mapping exercises, and is currently supporting locally initiated ESD interventions in four of those. With this local ownership, it has been observed that these initiatives have gained significant traction where earlier efforts may not have, and that there has been more spontaneous collaboration and communication between government departments and other stakeholders.

Extending the good work: Despite improved approaches overall, there remain a number of issues related to donor funding of ESD activities in SIDS. Donor commitments tend to come with fixed duration. However, a number of sources have indicated the need for sustained relationships in order to accomplish substantive changes in education systems. Short duration ‘project-based’ approaches also tend to result in limited ownership, with challenges related to institutionalisation of good work, particularly when there is too much reliance on outside expertise, rather than working with stakeholders within local systems.

Most notably, information sources in both the Pacific and Caribbean have indicated that there is a tendency for donor funding to distort local agendas because of the availability of funding for interventions in some areas, or on certain themes, but not others, or because of strings attached to the funding itself. In the SIDS context, it is not only CSOs that rely on external funding – even MoEs rely on the opportunities presented by such projects. However, too often, local organisations are forced to go where the money is. Recently, there appears to have been a shift in focus away from ESD and sustainable development towards ‘climate change’ as the new focus of funding. Other prominent issues in recent years have included disaster preparedness, biodiversity, reefs, turtles and so on. The instability created by shifting funding priorities leads to insecurity in a context where there is a need for slow and steady development focused on medium- and long-term goals. This is an area warranting reflection and increased co-ordination from the donor community.

On the heels of the Rio+20 Conference (UNCSD), and with a view towards the next set of IAGs, it is recommended that a more stable and long-term approach be adopted. The outcome document of the UNCSD not only includes a resolution to ‘promote ESD and to integrate sustainable development more actively into education beyond the UNDESD’ (UNCSD 2012: 44), but also outlines the process for the development of sustainable development goals, which will provide a foundation for global discussion around successors to the existing MDGs.

6.2 National management

6.2.1 Good practice: Strong national policies supporting sustainable development being translated into institutionally-grounded changes in the education sector

While the translation of policy into practice is not straightforward, the importance of strong national policies supporting sustainability and ESD cannot be overestimated. As the countries first hit by the impacts of climate change, a number of the focus countries are demonstrating global leadership by prioritising sustainability in national policies and development plans. While all of the focus countries are working in this area to a greater or lesser extent, two examples warrant special mention.

With dense rainforest coverage, continental borders, a relatively large landmass and a low population density, Guyana is distinct from most SIDS. However as a coastal developing nation, it faces many of the same development and educational issues. Recognising the global importance of its rainforest area in terms of ecosystem services (biodiversity, fresh water, carbon sequestration etc.), Guyana in 2011 launched a national Low Carbon Development Strategy (LCDS). The LCDS aims to transform Guyana's economy while combating climate change. With the support of an increasingly enlightened donor community which recognises the Guiana

Table 6.2 National co-ordination for ESD activities

	Jamaica	Dominica	Guyana	Maldives	Mauritius	Samoa	Tonga	PNG	Solomon Islands	Nauru
National committee/ co-ordinating body	Yes				Yes		Yes			
ESD strategy or action plan	Yes		Yes*		Yes*		Yes*			

* Prominent, but integrated into broader sector documents.

Table 6.3 Titles of national development plans/strategies

Country	National plan
Dominica	Integrated Development Plan
Guyana	Low Carbon Development Plan
Jamaica	Vision 2030 Jamaica National Development Plan
Maldives	Maldives National Sustainable Development Strategy
Mauritius	National Development Strategy; Maurice Ile Durable
Nauru	National Sustainable Development Strategy
Papua New Guinea	Medium Term Development Plan
Samoa	Strategy for the Development of Samoa: Ensuring Sustainable Economic and Social Progress
Solomon Islands	National Development Strategy
Tonga	National Strategic Development Plan

Shield bioregion as a global public good, the Guiana Shield Facility is supporting the implementation of the LCDS through the financing of projects to support this economic transformation. The LCDS is already translating into educational change. As signatories to the Tortola Declaration on Climate Change Education in the Caribbean, Guyana has undertaken curriculum reforms and the development of new programmes to support ESD.

The example of Mauritius inspires in a different way. Recognising the imperative nature of addressing sustainability issues, the prime minister launched the concept of Maurice Ile Durable (MID) in 2008, presenting a long-term vision aiming to make Mauritius a world model of sustainable development, particularly in the context of SIDS. Under MID, a broad multi-stakeholder working group on education referred to as Working Group 5 (WG5) was established to formulate proposals and targeted action plans to transform the current education system into a true embodiment of ESD in order to achieve the MID vision. The vision of ESD set out by WG5 is authentically by and for Mauritius, well grounded in the local context. This vision elaborates four subthemes: empowerment of citizens; environment education; education for sustainable development; and public health education, through five major thrusts: consolidating access; integrating non-formal, informal and formal learning; reorienting the education system; capacity building at all levels; and strengthening awareness of key issues. The approach is systematic and comprehensive, with proposals addressing the core aspects of the education system's institutional infrastructure, which if fully implemented could provide a strong and coherent driver of positive change towards sustainability within a generation. While the implementation of short-term proposals is just beginning, Mauritius will be an example to watch and learn from in the coming years.

Extending the good work: In both of the examples above, there is a clear relationship between high-level policies, and the changes underway in the education systems. This can be attributed in part to the prominence of sustainability thinking in the national policies. In every national policy reviewed, entry points for ESD can be identified, but entry points are not always enough. The dedication to sustainability which is so apparent in both the Low Carbon Development Strategy and Maurice Ile Durable leaves very little choice but to begin the real work of reorienting education. However, for countries without such concerted strategies, entry points nonetheless present real opportunities. Tonga's Strategic Development Framework, while mentioning environmental sustainability, lacks any real emphasis on sustainable development. Nonetheless, Tonga's MoEWAC recently-developed curriculum framework prominently features both sustainable development and sustainable livelihoods as overarching themes to be integrated throughout all course curricula. This example is reflective of what can be done with relatively sparse ESD entry points in national policy documents, provided there is committed leadership within education ministries.

6.2.2 Gap: The implementation gap – translating policy into practice

This study has presented a large number of ESD-related policies, plans, strategies and frameworks from the different regions and focus countries. While there is a great deal of variability from country to country, one of the common themes is a gap between

policies and practices. This is not to say that good work is not happening – to the contrary, there are many excellent examples of ESD implementation. However, these remain relatively isolated examples. Education is notoriously slow to change, and even in countries with strong policy structures to support ESD, the changes have been slow to take effect on any broad scale. This implementation gap relates to the enabling environment and the local capacity to effectively implement high-level policies, even when there is will and commitment to do so. In some cases, system constraints related to resources or technical capacity are at the heart of the issue. In other cases, overburdening and competing agendas are blamed. In still others, there are conflicting messages in which resources are not aligned with policies, or in which policies themselves are not aligned with one another.

Bridging the gap: There are no quick fixes that will make reforms or policies easy to implement. However, some of the challenges can be alleviated through the development of well-formulated national plans with clear accountabilities and focal points. Many of the focus countries do not have a national strategy related to ESD, and of those that do, even fewer have a functioning committee of focal points to co-ordinate ESD. While many MoEs have incorporated ESD into plans for the education sector, most lack a strong emphasis on ESD, and these plans tend not to recognise the important role which higher education, TVET and non-formal education play in ESD. As such, implementation proceeds somewhat haphazardly. It should also be recognised that in most of the focus countries, there is indeed a great deal of ESD being implemented. What tends to be lacking is the coherency and unified thrust that would contribute to real and lasting change. An effective way of viewing ESD implementation comes from Tonga, where educational leaders have recognised that ESD is not a new initiative to be undertaken on top of everything else, but rather, a *set of principles* that can be interwoven into existing initiatives and programmes to add value to their delivery – suggesting that there is room to mobilise or reallocate existing resources to further support this work rather than launching another new programme.

The following list of suggestions for helping to bridge the gap between ESD policies and practices has been drawn from a number of sources representing the different focus countries:

- New policies and plans need to have funds secured/allocated in advance;
- Providing incentives and mandates related to implementing ESD;
- Need to revisit outdated policies which conflict with ESD;
- Need for better resource materials to support all those working on ESD, not just teachers;
- Awareness raising and mass media is necessary to create enabling environment for ESD at community level;
- ESD work is sometimes done on top of other work, but it would be more effective if people could be properly designated to work on it;
- Don't base plans on temporary budgets;

- Involvement of stakeholders, though time consuming, helps make sure that policies are relevant; and
- Involvement of end users during planning and development helps to ensure that there is ownership for the work.

6.2.3 Good practice: Engagement and ownership of local experts and involvement of end-users

One of the characteristics of good ESD is that it is well contextualised within local narratives, local perspectives and local knowledge systems. As such, the involvement of local experts in any ESD initiatives is critical. The word ‘expert’ in this context does not necessarily mean one with multiple degrees or paper qualifications. Rather, the expert is someone who really knows the context in which ESD is to be carried out. One of the major success factors cited in the sustainable livelihoods subproject of the PRIDE project (Nauru) discussed above was the direct involvement of the teachers who would be implementing the sustainable livelihoods curriculum materials. Their knowledge of the local culture and knowledge systems facilitated their research work, and contextualised their analysis and curriculum development. Then, as teaching modules were prepared, their first-hand experiences in local classrooms enabled them to develop viable materials, well-linked to local needs and grounded in local classroom realities.

Extending the good work: Since much of the ESD work being done in the focus countries is funded by foreign donors and multilateral agencies, there is often an expectation of involvement of foreign experts. While outside expertise may add value to the work, the need for local ownership and contextual appropriateness is sometimes at odds with that involvement. The value of ‘cowboy consultants’, who fly in for a short period of time to develop programmes or deliver training, should be re-evaluated by donor agencies. By the same rationale, there should be a review of policies which institutionally undervalue local expertise through the categorisation of ‘local’, ‘regional’ and ‘international’ consultants. This point was reinforced not only by local experts, but also by outside experts who stated, in reference to one particular ESD strategy, that ‘although it is not the way I would have done it, the local initiative and ownership of the strategy is resulting in it actually being implemented’, as opposed to so many which are not. The value of ‘home sown, home grown’ initiatives cannot be overstated, and progressive organisations appear to be shifting to a focus on helping to identify local priorities, and supporting them through a value-added incubation process, rather than introducing programming agendas of their own.

6.2.4 Good practice: Interministerial and interdepartmental collaboration guided by higher-level ESD strategies and frameworks

While much of the work of ESD falls naturally into the formal education sector, there are key roles to be played by other ministries with responsibility for environment, planning, civil society and higher education, to name a few. Interministerial collaboration is a challenge, but most SIDS are rising to this challenge. In Tonga, a National Task Force for ESD was appointed in 2007 to co-ordinate ESD into national

planning and implementation of activities at the national level. Chaired by the Ministry of Finance and National Planning, the Task Force includes representatives of 11 other ministries, as well as key organisations like the National Youth Congress, the Civil Society Forum and the National Media Council. With the emphasis on education, the MoEWAC has been appointed as the secretariat of the Task Force.

In Mauritius, guided by the Maurice Ile Durable (MID) concept and related policy and strategy documents, there is evidence of strong collaboration between ministries and departments on ESD planning thus far. The Ministry of Environment and Sustainable Development (MoEnSD) has overall responsibility for sustainable development policies, and also steers the country's national ESD plan. Multi-stakeholder working groups have developed goals and plans under the MID framework including a detailed vision of education's role in the country's sustainable development. While the MoEnSD take the lead, others which have been involved include the Ministry of Social Integration and Economic Empowerment, the Ministry of Tourism and Leisure and the Ministry of Energy and Public Utilities. The challenge ahead for Mauritius will involve translating this high-level collaboration into effective results-oriented implementation that continues to benefit from the practical expertise of the relevant ministries and departments.

An example of such practical collaboration can be drawn from Samoa, where the Ministry of Natural Resources and Environment (MoNRE) has primary responsibility for sustainable development, yet also plays an important role in awareness raising on environmental issues. The MoNRE has a Capacity Building Section, which works closely with other departments to co-ordinate school programmes as well as activities with community youth groups. The MoNRE's direct involvement in ESD includes production of educational materials, school presentations, assisting with field trips and promoting environmental awareness through school competitions and national awareness days. In addition to the MoNRE, other governmental agencies, ministries and state organisations (such as the Samoa Water Authority) also conduct school visits and provide resource materials for students and teachers.

Enhancing the good work: While the two examples above illustrate some of the potential of intragovernmental collaboration, it is notable that in all three cases, the lead ministry is not the MoE. However, for ESD to be effectively mainstreamed into educational agendas, it is critical that MoEs take a central role in setting educational reform agendas – something which only they have the expertise to do – while working with other ministries to inform that work. However, it is equally important that the support of other ministries does not become marginalised. While ministries of environment typically have a lead role on sustainable development, and are often actively involved in ESD as well, their energies are frequently directed towards classroom visits and resource development. Such activities, while beneficial, are merely *supplemental*, in that they are outside the core of activity. Similarly, the more common ad hoc approaches to interministerial collaboration observed in most countries may achieve targeted results, but rely on the commitment of the individuals involved and are unlikely to be sustained if the parties are transferred or funding shifts. For lasting collaboration, mechanisms likely need to be institutionalised through

incentive structures and accountability measures, terms of reference, or memoranda of understanding between line ministries.

6.2.5 Gap: Co-ordination mechanisms and multi-stakeholder processes to guide on-the-ground implementation

One of the most prominent themes emerging from reports, questionnaires and interviews obtained for this review is the need for better national level co-ordination of ESD implementation. There is a recognition of good work being done by CSOs, by MoEs and other government departments, by public institutes and schools, and by private sector partners, but as one government representative put it; 'There is a need to bring together related activities under the umbrella of ESD under one cohesive plan so that activities are not simply ad hoc, but focus on working towards a unified goal.' ESD cuts across sectors and technical areas, and many stakeholder groups are involved in implementing related activities. While some of the focus countries have meta-organisations which may represent CSOs in government initiatives, such as the Civil Society Forum of Tonga, co-ordination mechanisms are generally weak or absent, particularly those linking government, public institutions, civil society and private sector. In addition, as noted above, many of the focus country governments also tend to lack internal mechanisms for co-ordinating interministerial actions. While strong national policies can help to align the efforts of different ministries and government agencies, their relevance to civil society and private sector organisations is relatively less, particularly when these organisations have not had a strong voice in the development of those policies. This results in inefficiencies and duplication of effort as different groups continue to pursue their own agendas.

Bridging the gap: While there tends to be relatively strong alignment between government priorities and publicly-funded institutions such as universities, there are opportunities for improved partnership with civil society and the private sector. There may be some opportunity to adapt strategies from other areas of work such as literacy, where work has been going on for many decades. Strategies which may have relevance for the ESD community include national literacy networks, as well as online databases and forums for literacy NGOs, used to share material and co-ordinate their activities. Such processes have proven effective in a number of countries in co-ordinating interventions from different stakeholder groups, and even drawing in new funds through private sector corporate social responsibility (CSR) departments. Closer to the field of ESD, the Jamaica Sustainable Development Network was launched in 1998, operating for five years as a UNDP programme before registering as an autonomous organisation. The programme was geared towards facilitating communication, introductions, and sharing information between public, private and non-governmental agencies related to Jamaica's sustainable development. However, it is unclear whether this network was still operational at the time of writing or why it may have closed.

A more current example comes from Tonga's Joint National Action Plan for Climate Change Adaptation and Disaster Risk Management (Kingdom of Tonga 2010). While not directly focused on ESD, it involves many of the same stakeholders, and outlines a structure for collaboration as well as a documentation of all related initiatives so that

all involved are aware of the activities being undertaken in government and non-governmental sectors, reducing the risk of duplication. In recent years, ESD mapping exercises have been undertaken in a number of the focus countries, providing initial information to work from in the development of such national ESD action plans or other cross-sector co-ordination mechanisms.

6.2.6 Gap: Formalised co-operation between governmental and civil society organisations

This report showcases a number of promising activities and initiatives, some led by ministries or other government departments, others by civil society organisations (CSOs). At the school level, some of the most inspiring initiatives have been led from outside MoE systems. With a narrow mandate and an ability to focus solely on individual issues, it is not surprising that CSOs are leading some of the most promising ESD work. However, there has been a broad failure on the part of governments and CSOs to work effectively together and to formalise collaboration to the point where real benefits are reaped. At best, there seems to be a kind of fair-weather support of CSOs' school-level initiatives. More commonly, the support of ministries of education amounts to a kind of tolerance.

The story of the Jamaica Environment Trust's (JET) School Environment Programme (SEP) is telling in this regard. The SEP was formally launched in 1997/98, and at its height in 2002/03 reached 345 schools, 280,000 students and 550 teachers. Having been evaluated a number of times, the programme has a proven record of results, as well as a proven methodology for working with schools and intermediary groups, and for replication/scalability. Among other activities, the SEP provides teacher manuals to participating schools, conducts school visits and support work, provides training workshops to teachers on environmental themes, organises a national competition and evaluation for participating schools, and hosts a formal awards ceremony each June. Over the years, the SEP has tried to align its work with the formal education system, including mapping environmental activities to existing curricula and providing additional resources for teachers, as well as working with the Ministry of Education, Youth and Culture (MoEYC) to obtain official recognition for the professional development workshops which teachers attend. The programme has been formally recognised by the MoEYC, and received governmental funding for a period of several years. However, in recent years, resource constraints and shifts in the priorities of funding agencies have caused the programme to contract. At present, the programme is working only in 30 schools – less than 10 per cent of its former glory – and is in danger of cancellation in the upcoming school year due to lack of funding.

Bridging the gap: This closure of SEP would be a loss, as examples of truly successful and replicable programmes are rare. The well-articulated ESD policies of the Government of Jamaica and MoEYC create a space within which there could be a possibility for such a programme to be institutionalised within the K-12 system. This appears unlikely, however, and represents a missed opportunity from which an important lesson should be learned. The SEP, for its part, tried to align its work closely with the MoE system, involving MoE staff and working closely with teachers at participating

schools, seeking to align teacher-training activities with MoE requirements. More than just a well-conceived environmental education programme, the SEP evolved to be closely aligned with MoE system policies and structures, as well as contributing to endorsed Government of Jamaica and MoEYC goals as articulated in the National Environmental Education Action Plan for Sustainable Development. SEP is not simply an extra-curricular or co-curricular programme, but contributes in a direct way to student learning in relation to national goals. However, the SEP was never successfully integrated into the education system. While MoE signatures have been successfully obtained on teacher training certificates, the professional development system has never credited teachers for their participation in these workshops; and while supervisory units had been approached to work with SEP personnel to support participating schools during routine supervision visits, this too never materialised.

The lesson to be learned from this experience relates to a duplication of efforts in systems characterised by major resource constraints. This story resonates with similar situations in many of the focus countries, in which CSOs and intergovernmental organisations are providing services that support an ESD agenda, but without the full benefit of governmental support. In addition, CSOs often find it difficult to scale their programmes up to a national level. Meanwhile, governmental agencies are working to advance ESD within constrained budgets, and limited technical capacity in ESD for the development of viable programmes. This situation warrants increased effort towards collaboration from both sides.

6.2.7 Gap: Lack of consistency and continuity in leadership and co-ordination

While sweeping initiatives like Maurice Ile Durable are promising, there are lessons to be learned from the experiences of related initiatives. Reflection on the experience of Jamaica's National Environmental Education Action Plan for Sustainable Development (1998–2010) suggests that the continuity of co-ordination mechanisms are very important, and that aspects such as funding for co-ordination and staff tenure should be committed in advance. This action plan was years ahead of its time, and was comprehensive in its scope and ambitions, including intragovernmental co-operation, however, implementation was never completed. During the implementation period, leadership for the co-ordination of the plan was passed between different organisations, some of which relied on external funding with fixed timeframes, resulting in a lack of consistency and ownership for its implementation.

A related experience can be drawn from the Pacific Regional ESD Action Plan. The USP's Pacific Centre for Environment and Sustainable Development (PACE-SD) was involved with the development of the plan, and went on to assume the co-ordination role for its implementation. However, as is often the case, the clearest vision of leadership comes from those involved in early stages, and with the retirement of the initial lead of the action plan, the co-ordinating role has been unstable and sometimes vacant, and much of the co-ordination work has been ad hoc, supported by other USP colleagues from the School of Education, UNESCO personnel, SPREP and others. As a result, only a small number of the initiatives described in the action plan have been implemented.

Bridging the gap: Planning for a project lasting a decade, or even several years, requires institutionalised co-ordination, including funds, structures and policies. There is a serious risk when co-ordination is dependent on an individual, or a relatively small group. While there is no guarantee, some stability can be established through the use of steering committees, terms of reference and other institutional structures that reduce the dependency on key individuals and share responsibilities between interested stakeholders. In addition, since instability of both leadership and funding are quite commonplace, contingency (or risk mitigation) measures should be incorporated into the plans themselves so that they do not become derailed should there be a break from initial assumptions.

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Chapter 7

Ways Forward

7.1 Access and coverage

Focus on reorientation rather than *adding on* or *adding new*: In many cases, ESD continues to be seen as an add-on or alternative to existing programmes. Implementing ESD will require helping those within the education system to understand that ESD is not something separate from regular education, but rather a central part of what education should be doing in the first place. The effectiveness of ESD will be enhanced if it can be embedded within the core values of education systems. Reorienting education to support sustainable development in this manner would require a systemic approach, providing policies, resources, curricula and training grounded firmly in the values of sustainable development. This would provide the scaffolding and support necessary to make ESD practicable. This approach would not neglect other considerations in educational development, since effective ESD is entirely compatible with effective education. The goal of sustainable development can and should be used to enrich understandings of education's basic value as a public good.

Strategic work in the K-12 system focusing on key drivers and constraints: While some countries are behind others in terms of policy and curriculum development, one of the major constraints common to most, if not all, of the focus countries is the capacity of the existing teaching workforce. With limited resources available, in-service professional development for teachers and school leaders on ESD should receive special consideration. In addition, noting the importance of exams as a driver of school and classroom practice, it will be important to begin reorienting exams to focus on learning outcomes relevant to sustainability, such as critical thinking and systems thinking, to help push educational practice in the direction of ESD.

Increase attention to lagging areas such as TVET and mass media roles in ESD: While much of the early attention in the DESD went to K-12 education and non-formal education, the importance of these areas has now been well established. More current sector mapping is required in most countries in order to determine the areas most in need of more concerted effort.

Increase research activity and the sharing of research on ESD: While a great deal of energy and resources are going into ESD-related initiatives in the focus countries, there is a dearth of real research related to what is working and what is not, with continued ambiguity around what results should be expected and how they could be measured. While this ambiguity remains, it will be difficult to make meaningful or efficient improvements in ESD implementation. In addition, attention should be given to making relevant research and publications available online through

consolidated platforms so that information is easily accessible to policy-makers and practitioners throughout the SIDS community.

7.2 Quality and rigour

Leveraging reform activities to embed ESD more deeply at the policy level: Many of the focus countries are in the process of broad educational reform activities, ranging from curriculum development to sector-wide interventions. This presents an excellent opportunity to embed ESD within the core institutional structures of education systems, particularly as many of the focus countries' development plans and strategies already identify sustainable development as a priority area. Policies can be viewed as the institutionalised values of the education system, and serious reflection should be given to what those policies say about what is important to each country.

Review the operationalisation of ESD in local policies and practices to ensure it remains relevant, comprehensive and balanced: In most countries, ESD implementation has been a process of making the road by walking it. This has led to a rich diversity in how ESD is being implemented in each of the focus countries, with unique features related authentically to each local context. However, analysis of the existing policies and initiatives suggests that there would be value in reflection on these concepts to ensure their balance of scope and issues – including those related to citizenship and social justice which have been somewhat peripheral in most countries.

Development of standards which strongly incorporate ESD, and outline expected practices in all areas of the education system: In order to make ESD widespread, it is important for practitioners throughout the education system to have a clear idea of what ESD should look like in their particular area of work – whether it is curriculum development, classroom teaching or school construction. While many countries have begun a move towards standards-based curricula, and many have incorporated ESD into high-level education policies, there are natural gaps between these national policies and many practices. A comprehensive set of national standards that incorporate ESD principles into all domains would be invaluable to scaffold and direct work such as teacher training and resource development systematically. These standards would serve to illustrate what is expected in each aspect of the education system, with careful consideration to ESD. A comprehensive approach would include standards, across multiple domains each, for:

- student learning (learning outcomes, processes and domains of development);
- teachers (qualifications, professional development, planning, pedagogical approaches);
- school leaders (similar to teachers, but also including school development planning and other school-level practices);
- supervisors (including ESD-related supervisory practices);
- school environments (including resource usage, schoolyards, school climate etc.);

- community participation (engagement with local communities, with parents etc.); and
- additional areas such as curriculum standards etc.

Development of practical models and examples of ESD: While a good deal of work is being done at the ground level, particularly with the support of CSOs, ESD in the formal education system is generally being led from the top down (from policy to practice). Increasingly it will become important to put resources into the development of practical school-based demonstration sites that will be able to provide an example of what ESD looks like in practice. Since most focus countries have a number of examples of ‘green’ or ‘eco’ schools, it would make sense to begin with these, developing a network of demonstration sites which could serve as exemplars and change catalysts. These sites will have an important role to play in clarifying new policies at an operational level, serving as both pilot sites and demonstration sites, and helping to teach others by example.

Increased focus on students’ immersive experiences: Much of the effort to date in ESD implementation has gone into the development of resource materials and programmes related to the content of ESD, or specialised programmes intended to engage students actively on a given issue. Relatively little attention has been given to socialisation and enculturation which influences sustainable behaviour and thinking patterns. In the controlled environments of educational institutions, there is untapped potential to support sustainability through whole school approaches that aim to cultivate sustainability-inclined citizens by making sustainable practices, sustainable thinking and critical engagement on relevant issues a part of their daily experience, week after week and year after year.

7.3 System management

Development of an integrated global framework of educational priorities which includes ESD at its core: While the UNDESD has clearly succeeded in placing ESD on the global agenda, the relatively slow response in implementing ESD on a large scale suggests that it is perceived by many to be something complementary to mainstream education – a kind of special interest, rather than a global imperative which should be considered core to education’s role in society. Education is inherently future-oriented; therefore if the future is compromised due to unsustainable human activity, the value of that education rapidly erodes. With this understanding, the next round of IAGs should incorporate ESD not as a component or pillar or subset of goals, but as a fundamental part of the vision of education articulated by the goals. There is a potential for this approach to be undertaken, grounded in the outcome document of the 2012 UN Conference on Sustainable Development, which outlines a commitment to the development of internationally agreed sustainable development goals.

Streamlining of policy and planning environment under the banner of ESD: Most of the focus countries have a highly complex policy environment with many competing priorities, making it difficult to maintain cohesion and efficiency at the

level of programme implementation. Over the next few years, as broad reform projects are implemented and new IAGs are framed, there will be opportunities to revisit overarching policies and to integrate ESD into the foundational policy structures of many systems. ESD policies should be aligned to national sustainable development priorities.

Current and comprehensive sector mapping around ESD to support better co-ordination and partnership: While a number of sector-mapping exercises were undertaken in both the Caribbean and the Pacific between 2006 and 2008, a great deal has changed since then. In order to improve co-ordination, there appears to be some need to undertake more comprehensive sector mapping to identify areas where there is duplication of efforts, as well as opportunities for partnership between government, public sector institutions, civil society and private sector. The result of such an exercise would ideally not be a paper document, but rather the establishment of a formal network or other co-ordinating mechanism such as a purpose-built dynamic online database or platform to support ESD going forward.

Establishment of clear co-ordinating mechanisms and accountabilities for ESD at the national level: While there are a great number of passionate ESD advocates across the focus countries, it appears that many governments have not yet made ESD a priority. This is evidenced by the ad hoc nature of ESD co-ordination and implementation, as well as ESD agendas that exist largely in rhetoric. In order for ESD to gain real traction, it appears that leadership, co-ordination and accountability all need to be considered further. This tends to start with the establishment of a national focal point, task force, or steering committee for ESD, and ideally not one operating outside of existing structures, but rather within MoEs or sustainable development bodies, with interministerial representation and participation from other relevant civil society and private sector stakeholders.

Results-oriented ESD reporting: While there is a wealth of ESD documentation available from the focus countries and regions, the vast majority of it has tended to be descriptive or activity-oriented. While this work has value, there is a complementary need for more tangible results-oriented information about what these interventions are accomplishing. This information is necessary in order to make informed policy decisions to guide ESD going forward. Where this is not feasible within government channels, it should be facilitated through donor-supported projects that are typically designed with a results-oriented logic model. Monitoring and evaluation information on such projects should be disseminated in order to share lessons learned through experience between SIDS. The further development of national ESD indicators, or more appropriately, national education indicators that reflect ESD as a priority, should also be considered.

Appendix A. Information on Cited ESD Initiatives

Initiative/ organisation	Details	Description
ACCU-UNESCO Centre of Excellence	University of the South Pacific Phone: +6793232313 www.usp.ac.fj/index.php?id=9846	This is a five-year (2007–2012) ACCU–UNESCO funded project; a joint initiative with three main partners within USP, Continuing and Community Education, School of Education and PACE–SD. The major thematic areas of emphasis for the project are teacher education, sustainability education and community empowering.
Associated Schools Project Network (ASPnet)	Global www.unesco.org/new/en/education/networks/global-networks/aspnet	UNESCO initiative linking schools together for networking and support on a variety of initiatives contributing to peace, intercultural dialogue, sustainable development, international understanding and quality education in practice.
Bina Hill Institute	Guyana Annai Amerindian District, North Rupununi Phone: +5922257401; +5927729292	Community education and TVET institution in rural Guyana; works with local indigenous populations to provide training in core areas as well as a number of environment-related disciplines, leading to employment in the conservation sector.
Civil Society Forum of Tonga (CSFT)	Tonga Phone: +67628282 Email: csft@kalianet.to http://civilsocietytonga.org	Umbrella organisation for CSOs in Tonga: The Civil Society Forum of Tonga (CSFT) was established in 2001 to address and co-ordinate the needs and collective roles of civil society organisations (CSOs), and to strengthen their capacity to be able to better serve their communities.

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Initiative/ organisation	Details	Description
Climate Change Quiz Competition	Samoa Contact information unavailable	A collaborative initiative of the Ministry of Education, Sports and Culture, the Ministry of Natural Resources and the Environment and local channel O Lau TV, in which teams of students competed in a quiz-style game show focussed on climate change.
ENACT	Jamaica Project closed. Information available at www.ecdpm.org/Web_ECDPM/Web/Content/Download.nsf/0/267B222037D7E097C125718700277DBD/\$FILE/ENACT%20Presentation.pdf	Capacity-building project jointly funded by the Government of Jamaica and Canadian International Development Agency (CIDA). The project worked within the National Environmental Protection Agency and helped to establish the National Environmental Education Committee and the National Environmental Education Action Plan for Sustainable Development, as well as complementary (non-mandatory) curricula and other deliverables.
Global Universities Partnership on Environment and Sustainability (GUPES)	Global http://new.unep.org/training/downloads/GUPES%20meeting%20programme.pdf www.guninetwork.org/guni.hednews/hednews/global-universities-partnership-on-environment-and-sustainability-gupes	Working in partnership with UNEP, the main aim of GUPES is to promote the infusion of environment and sustainability concerns into teaching, research, community engagement and management of universities and other tertiary institutions. The main objectives of GUPES focus on the development of ways in which higher education institutions can make meaningful contributions to global sustainable development.
Iwokrama International Centre for Rainforest Conservation and Development (IIC)	Guyana Phone: +5922251504 Email: iwokrama-general@iwokrama.org www.iwokrama.org	The Iwokrama International Centre (IIC) was established in 1996 under a joint mandate from the Government of Guyana and the Commonwealth Secretariat to manage the Iwokrama forest, a unique reserve of 371,000 hectares of rainforest, 'in a manner that will lead to lasting ecological, economic and social benefits to the people of Guyana and to the world in general.'

Initiative/ organisation	Details	Description
Jamaica Environmental Trust (JET)	Jamaica +8769603693 www.jamentrust.org	Jamaican CSO involved in a broad range of environmental activities ranging from community education to advocacy and legal activity. JET implements the School Environment Programme (discussed separately) as well as a programme working in partnership with other CSOs to arrange visits to natural areas for inner city and at-risk youth.
Jamaica Sustainable Development Network	Jamaica www.jsdnp.org.jm www.civcaribbean.org/en-US/ content/jamaica-sustainable- development-network	Jamaican CSO, which began as a UNDP project, with a mandate to connect public, private and civil society organisations and resources to support sustainable development.
Kakala Research Framework	Pacific Region Information available in (Fua 2009)	Research framework based on a garland metaphor and grounded in Pacific knowledge systems and Tongan language. The Kakala framework utilises localised research methods, ethics and analytical techniques.
Lakalaka Policy Framework	Tonga Ministry of Education, Women's Affairs and Culture www.tongaeducation.gov.to	National policy framework and guiding document for education reform in Tonga, which uses the metaphor of the <i>lakalaka</i> – a highly sophisticated form of traditional dance and poetic choreography – to outline policy guidance for education sector reform which is highly congruent with ESD, with a cultural emphasis.
Live & Learn Environmental Education (LLEE)	Pacific Region: Solomon Islands, Papua New Guinea, Maldives; International Office (Australia) Phone: +61396501291 Email: enquiries@livelearn.org www.livelearn.org	International CSO implanting a variety of education, environment and community development projects. LLEE conducts programmes based on local needs, and does not have a single model. However, the programmes integrate these themes along with other priority areas such as sexual and reproductive health education, which are all consistent with ESD.

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Initiative/ organisation	Details	Description
Low Carbon Development Strategy	Guyana www.lcds.gov.gy	National development strategy aiming to transform Guyana's economy while combating climate change. The strategy places a strong emphasis on conservation and ESD.
Mainstreaming Environmental Sustainability in Caribbean Universities (MESCA)	Caribbean UNEP/PNUMA, Panama www.pnuma.org ; www.unep.org	Sustainability-related audit survey tool adapted for use in the Caribbean from a tool original designed to assess the mainstreaming of environment and sustainability in African universities. The application of this tool in the Caribbean was funded by UNEP, Panama.
Mama Graun Tribal Charter	Papua New Guinea NGO Watch Group Phone: +6753234480	A local Earth Charter Initiative activity: an adaptation of the Earth Charter was developed and endorsed by PNG's 870 tribes, affirming a commitment to sustainability as articulated in the charter.
Management Institute for National Development (MIND)	Jamaica www.mind.edu.jm	Provides leadership training to public servants, including leadership training to school principals, which includes environmental and sustainable development-related content.
Mangrove Management Programme	Guyana Contact information unavailable	Ministry of Education initiative to educate and engage students on mangrove management and conservation issues. Initiatives included development of resource materials, training for teachers and the development of video programme, available on DVD and which is aired regularly on public television.
Maurice Ile Durable (MID)	Mauritius Information available at www.uom.ac.mu/sites/mid/files/resources/Analysisand-SynthesisReport.pdf www.gov.mu/portal/sites/mid/file/final-WG5.pdf	National development concept in Mauritius emphasising sustainable development, consisting of policies and related strategies covering all sectors. MID Working Group 5 focused on education issues, and has developed a broad set of short, medium and long-term proposals.

Initiative/ organisation	Details	Description
National Environmental Education Committee (NEEC)	Jamaica, National Environmental Protection Agency www.nepa.gov.jm/neec/index.htm www.nrca.org/neecwebsite/neec/neec.htm	Established under the Jamaica National Environmental Protection Agency through the ENACT project; led the development of the National Environmental Education Action Plan for Sustainable Development (1998–2010)
Network of Island Universities (NIU) EDULINK	Pacific Region PACE–SD, University of the South Pacific www.usp.ac.fj/index.php?id=9844	Higher education ESD project linking three Pacific universities including University of the South Pacific (multiple countries), National University of Samoa and University of PNG. The project has already resulted in a number of new ESD-related programmes being offered at the universities.
Pacific Association of Technical and Vocational Education and Training (PATVET)	Pacific Region www.spc.int/patvet/index.php?option=com_content&view=article&id=114&Itemid=64	Regional association for TVET, with a mandate that includes promotion of measures to secure sustainable livelihoods.
Pacific Centre for Environment and Sustainable Development (PACE–SD)	University of the South Pacific www.usp.ac.fj/index.php?id=3917	Recognised as a centre of excellence in environmental education and research, PACE–SD takes a lead role on many ESD activities at USP and in the Pacific Region. PACE–SD took a lead role in the development of the Pacific Regional ESD Framework and Action Plan, as is the designated co-ordinating agency for the plan.
Pacific Network of Island Universities Higher Education for Sustainable Development Framework	Pacific Region University of the South Pacific (USP).	Limited information available. The network is referenced in Koya-Vaka'uta 2011a.

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Initiative/ organisation	Details	Description
Pacific Regional Initiatives for the Delivery of basic Education (PRIDE)	Pacific University of the South Pacific, Institute of Education Phone: +67629055 www.usp.ac.fj/index.php?id=pride	While the PRIDE project (now closed) was broad in scope, the subproject discussed in this paper involved highly-sensitised local research using teachers to document sustainable living skills, and then develop teaching units and curriculum modules based on these.
Quality Schooling for a Sustainable Future	Tonga Ministry of Education, Women's Affairs and Culture www.tongaeducation.gov.to	The draft national curriculum framework, with substantial emphasis on sustainability. The five overarching (cross-cutting) themes of the framework are: Tongan culture and values; life skills; education for sustainable livelihoods; enterprise; and education for sustainable development.
Sandwatch	Global Associated with UNESCO and ASPnet www.sandwatch.org	UNESCO-supported programme working from the school level to engage students, teachers and community members in the monitoring and care of local beaches and delicate areas.
School Environment Programme (SEP)	Jamaica, Jamaica Environmental Trust Phone: +8769603693 www.jamentrust.org	SEP is a longstanding programme of the Jamaica Environmental Trust, which involves a number of complementary ESD interventions at the school level. The programme is largely teacher and principal led, but with extensive support and scaffolding provided by JET through materials, training, support visits and motivational activities.
Sustainable Livelihood and Education in the Pacific (SLEP)	Tonga. Project closed, information available from Fua (2009)	NZ Aid-funded project which used highly-sensitised methods to research local approaches to sustainable livelihoods and associated knowledge, skills and values, which formed a basis for the future development of the new draft curriculum Quality Schooling for a Sustainable Future.

Initiative/ organisation	Details	Description
Sustainable Living Initiative Centre (SLIC)	Dominica Jem Winston, Managing Director www.slicdominica.org www.3riversdominica.com	Registered NGO, working alongside the 3 Rivers Eco-Lodge, with a mandate to promote awareness of environmental issues. SLIC focuses on the use of simple technology to minimise negative impacts on the environment and conserve natural resources. SLIC operates without reliance on public utilities, and conducts a wide range of educational programmes related to renewable energy and alternative power.
Sustainable Teacher Environmental Education Project (STEEP)	Jamaica, Joint Board of Teacher Education Project closed; information available at www.jbte.edu.jm/cms/Projects/SustainableTeacherEnvironmentalEdProjectII.aspx	Project implemented with the Joint Board of Teacher Education. The project had two main components: curriculum revision in ECE and secondary levels; and support to the institutionalisation of ESD in two pilot teachers colleges.
Tonga Education Sector Programme (TESP)	Tonga Ministry of Education, Women's Affairs and Culture www.tongaeducation.gov.to http://tongaeducation.gov.to/index.php?option=com_content&view=article&id=158:nzaid&catid=38:devpart&Itemid=155	An NZAid- and World Bank-supported project working with the MoEWAC on sector wide strategic planning and development.
UNESCO Chair of Teacher Education and Culture	Pacific Region School of Education, University of the South Pacific Phone: +6793301263 www.usp.ac.fj/index.php?id=10151	Working through the USP's School of Education, the UNESCO Chair project aims to promote an integrated system of research, training, information and documentation activities in the field of teacher education linked to culture.
University of the South Pacific (USP)	Pacific Region, including: Tonga, Samoa, Solomon Islands and Nauru Phone: +6793231000 www.usp.ac.fj	Note USP is implementing a number of projects listed separately; <ul style="list-style-type: none"> • ACCU–UNESCO Centre of Excellence • Mainstreaming ESD at USP to Enhance Education Based Capacity Building for Sustainable Development in the Pacific Island Countries • PRIDE

Appendix B. List of Persons Consulted Directly

Name	Designation	Organisation
Asker, Sally (Ms)	Director	Insight Sustainability, Australia/Fiji
Bedasse, Janet (Dr)	Independent Environment/ Education Consultant	Jamaica
Chesney, Patrick (Mr)	Chief Technical Advisor	Guiana Shield Facility, Guyana
Deo, Seema (Ms)	Education and Social Communications Advisor	Secretariat of the Pacific Regional Environmental Programme
DESD Secretariat	General delivery address	UN Decade of Education for Sustainable Development
Dookhony, C (Mrs)	Director	MoE, Mauritius
Down, Lorna (Dr)	Senior Lecturer, Language Arts	University of the West Indies
HoLung, Janice (Dr)	Technical Assistant	Joint Board of Teacher Education, Jamaica
James, Samantha (Ms)	Information and Outreach Co-ordinator	Iwokrama Centre, Guyana
Jitoko, Filipe (Mr)	Social Policy Advisor	Pacific Islands Forum Secretariat
Fua, Seu'ula Johansson (Dr)	A/Director, Institute of Education	University of the South Pacific
Koya-Vaka'uta, Cresantia Frances (Dr)	Lecturer in Education; ESD Co-ordinator	School of Education, University of the South Pacific
Martinez, Isabel (Ms)	Programme Officer	PNUMA/UNEP, Panama
McCaulay, Diana (Ms)	Chief Executive Officer	Jamaica Environmental Trust
Moala-Mafi, Lucy (Mrs)	Division of Human Resources Management and International Affairs	MoEWAC, Tonga
Mohamed, Naashia (Dr)	Deputy Director General; Head, Curriculum Division	Education Development Centre, MoE, Maldives
Mohammed, Omar (Mr)	Education Officer	Cropper Foundation, Trinidad and Tobago
Petaia, Galumalemana Nuufou	Chief Executive Officer	Ministry of Education, Sports and Culture, Samoa
Punalall-Jetoo, Petal (Ms)	National Science Co-ordinator	MoE, Guyana
Sabass, Hanna (Ms)	Climate Change and Education Advisor	Secretariat of the Pacific Community
Thomas-Caesar, Raquel (Dr)	Direct, Resource Management and Training	Iwokrama Centre, Guyana
Vanhala, Katie (Ms)	Associate Expert, Education for Sustainable Development	UNESCO Bangkok
Vize, Susan (Dr)	Programme Specialist for Social and Human Resources	UNESCO Office of the Pacific States
Winston, Jem (Mr)	Managing Director	Sustainable Living Initiative Centre, 3 Rivers Eco Lodge, Rosalie Forest Eco Lodge, Dominica

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