ARIES

Australian Government

Department of the Environment and Heritage

A National Review of Environmental Education and its Contribution to Sustainability

Frameworks for Sustainability 1

MACQUARIE UNIVERSITY ~ SYDNEY

This report is Volume 1 in a five part series that reviews Environmental Education and its contribution to sustainability in Australia. The research which underpins it was undertaken between October 2004 and January 2005 by the Australian Research Institute in Education for Sustainability (ARIES) for the Australian Government Department of the Environment and Heritage. The series is titled '*A National Review of Environmental Education and its Contribution to Sustainability in Australia*' and covers the following areas:

***Volume 1**: Frameworks for Sustainability*
***Volume 2**: School Education*
***Volume 3**: Community Education*
***Volume 4**: Business and Industry Education*
***Volume 5**: Further and Higher Education*

This volume provides the conceptual context for understanding Environmental Education's contribution to sustainability. It attempts to define the components of learning for sustainability and reviews international and national frameworks which support this approach to Environmental Education. The document provides analysis as well as recommendations to improve strategic planning and actions for sustainability through Environmental Education in Australia.

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Preface

Thousands of sustainability initiatives have emerged across the globe since the mid-1980s. These have been in response to international calls for improved quality of life, ecological protection, social justice and economic equity. Despite this intense activity, many experts have pointed out that progress has been modest and there appears to be little evidence of positive achievement.

No country is sustainable or has come close to becoming sustainable and there is no one size fits all recipe for success. Given this reality, the international community has come to recognise that **sustainability is essentially an on-going learning process** that actively involves stakeholders in creating their vision, acting and reviewing changes. As a result, education in the context of sustainability is now understood as a change process rather than a message or level which must be achieved. Sustainability calls for the use of new learning approaches that help us explore sustainability and build skills that enable change, such as mentoring, facilitation, participative inquiry, action learning and action research.

Another realisation emerging out of the sustainability discourse is that major problems cannot be solved from our current way of living but will require a **shift from traditional ways of thinking and acting** upon environmental problems. A sustainability approach moves away from 'doom and gloom' approaches towards futures oriented thinking and action. This involves questioning and reflecting upon our actions and decisions, so we can re-think and re-design our activities. This approach is called **learning for sustainability**.

For Australia to achieve environmental and quality of life outcomes, it is critical that we:

- incorporate learning based approaches to change within environmental and sustainability initiatives; and
- mainstream sustainability approaches within education, training and capacity building.

In order to inform a strategic response to these needs the Australian Research Institute in Education for Sustainability (ARIES) undertook research to review Environmental Education (EE) and its contribution to sustainability in Australia. The five volumes which make up this series assess current practice and identify needs across the sectors. It has been written to be relevant to all those involved in the design and delivery of EE which includes policy makers, funding bodies, educators and researchers. Each volume highlights opportunities to improve policy, practice and research.

The series is titled '***A National Review of Environmental Education and its Contribution to Sustainability in Australia***' and covers the following areas:

Volume 1: Frameworks for Sustainability
This volume provides the conceptual basis for understanding EE's contributions to sustainability. It attempts to define the components of learning for sustainability approaches as well as the influence they have had on EE as an area of learning. It differentiates between traditional EE practice and more 'critical' approaches to learning prompted by the sustainability agenda.

The volume also looks at international and national strategic frameworks which support EE initiatives for sustainability. The document provides analysis as well as recommendations to improve strategic planning and actions for sustainability through EE. The research undertaken recognises the foundation provided by the '*Environmental Education for a Sustainable Future: National Action Plan.*' However, as international experience has shown, maintaining existing structures will not be enough to address the new approaches to EE prompted by the sustainability agenda. It is therefore recommended that Australia build on current experience to develop a ***strategic framework in learning for sustainability***. This chapter sets the scene for the other volumes in this series.

Volume 2: School Education
This volume documents how learning for sustainability approaches still struggle to feature in mainstream school education. Whole-school approaches to sustainability are emerging, but are still rare. It is critical to strengthen the presence of EE within school curricula and teacher training to ensure that schools and students develop the capacity to contribute to sustainability. We also need to challenge practices in Early Childhood Education as well Environmental Education Centres to ensure that effective approaches to learning for sustainability are developed.

Volume 3: Community Education
In the community, learning for sustainability is critical to raising awareness, building partnerships and enabling people to take action. It is needed to enhance social capital, build community capacity for decision-making and build community leaders. This volume documents valuable programs in EE emerging across community groups in Australia which demonstrate the potential for change towards sustainability through education.

Volume 4: Business and Industry Education
Industry is under ever increasing pressure to engage with and respond to sustainability issues. However, many companies, large and small, are struggling with this new broader business agenda. This may be due to a lack of belief in the business case for sustainability and/or a lack of the knowledge, skills and values required to effect the necessary change. This volume documents how EE, and more specifically learning for sustainability approaches can assist in this process.

Volume 5: Further and Higher Education
Sustainability has been identified as one of the most pressing challenges facing further and higher education. Sustainability considerations cut across the core functions of education, research and management operations of these organisations. Volume 5 argues that it has implications for the core of the institutional culture - influencing the decisions, procedures and actions of the further and higher education sector. It documents how learning for sustainability initiatives help achieve organisational change within this sector.

These reports are available for download in PDF format from www.aries.mq.edu.au and www.deh.gov.au/education

The research which underpins this series was undertaken by ARIES for the Australian Government Department of the Environment and Heritage under the direction of the National Environmental Education Council. Whilst the volumes do look across society, the research does not attempt to examine all areas in depth. There is often a tension between breadth and depth of coverage in a series such as this one, so judgements were made with regards to the selection of themes featured in the volumes. The volumes are based on studies undertaken through a review of documented programs and literature. It did not involve interviews or empirical research, although the findings were validated by key informants (experts and experienced practitioners in the field) who acted as peer reviewers.

The focus of this report is on Australia, however, indigenous issues associated with learning for sustainability have not been explored and require further research. We consider this essential to building a better dialogue and understanding of sustainability within the Aboriginal context. However, this research is best conducted by indigenous educators in a culturally appropriate way.

Contents

Abbreviations

ARIES	Australian Research Institute in Education for Sustainability
AuSSI	Australian Sustainable Schools Initiative
CSR	Corporate Social Responsibility
DEC	NSW Department of the Environment and Conservation
DEFRA	Department for Environment, Food & Rural Affairs, UK
DEH	Australian Government Department of the Environment and Heritage
DET	Australian Government Department of Education and Training
EE	Environmental Education
EPA	NSW Environmental Protection Agency
GRI	Global Reporting Initiative
ICLEI	International Council for Local Environment Initiatives
ICT	Information and Communication Technology
IIED	International Institute for Environment and Development
IISD	International Institute for Sustainable Development
IT	Information Technology
IUCN	The World Conservation Union
LA21	Local Agenda 21
NEEC	National Environmental Education Council
NEEN	National Environmental Education Network
NEES	National Environmental Education Statement
NGO	Non-Governmental Organisation
NRCA	Natural Resource Conservation Authority, Jamaica
NSESD	National Strategy for Ecological Sustainable Development
NZBCSD	New Zealand Business Council for Sustainable Development
OECD	Organisation for Economic Cooperation and Development
PAR	Participatory Action Research
PCE	New Zealand Parliamentary Commissioner for the Environment
SADC	Southern Africa Development Cooperation
SDE	Sustainable Development Education
SFOL	Sustainability Focused Organisational Learning
TAFE	Technical and Further Education
TBL	Triple Bottom Line
UN	United Nations
UNDESD	United Nations Decade of Education for Sustainable Development
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UTS	University of Technology Sydney
VAEE	Victorian Association for Environmental Education
VET	Vocational Education and Training
WBCSD	World Business Council for Sustainable Development
WSSD	World Summit on Sustainable Development
WWF	World Wide Fund for Nature

"Our vision is a world in which there are ***opportunities to learn*** about sustainable development. A world where a skilled population makes ***informed decisions*** in their home, community and working lives and in their leisure activities. A world where people ***understand and take responsibility*** for the impact they have on the quality of life of other people, locally and globally."

Sustainable Development Education Panel, UK (1999, p.11)

1.1 Overview: Frameworks for Sustainability

Box 1.1
Pathways to Learning for Sustainability

Capacity building consists of participative training which takes place either through a formal course, workshop or in-situ mentoring support. The focus is on the development of the individual and/or the organisation.

Learning based strategies consist of an informal but structured process which uses action learning, reflection and change to improve the effectiveness of an organisation, program or action plan.

Box 1.2
Defining Sustainability

'It is curious to note that while we have difficulty envisioning a sustainable world, we have no difficulty detailing what is unsustainable in our societies. We can rapidly create a laundry list of problems – inefficient use of energy, lack of water conservation, pollution, abuses of human rights, overuse of personal transportation, consumerism, etc. However, we should not chide ourselves because we do not have a clear definition of sustainability: many truly great concepts of the human world such as democracy and justice are hard to define and have multiple expressions in cultures around the world.'

Hopkins and McKeown (2002, p.13)

Many people in community groups, local councils, government agencies and industry as well as in schools, colleges and universities are *building capacity* and using *learning based strategies* to help society shift towards a more sustainable future (see Box 1.1).

The international literature recognises that although sustainability is hard to define (see Box 1.2), there is, in principal, agreement that we must strive towards an improved quality of life which does not place our natural environment and ecosystem services at risk[1]. Around the globe governments, industry, communities and citizens have rallied to make commitments and support actions for sustainability. Agreements vary in scope and scale and include the *Convention on Biological Diversity*[2]*; Ramsar Convention on Wetlands*[3]*; Climate Change Convention*[4]*; Convention to Combat Desertification*[5]*; Aarhus Convention on information, public participation and access to justice*[6]*; Agenda 21*[7]*, the World Summit on Sustainable Development Implementation Plan*[8] *and the UN Millennium Development Goals*[9]. These documents commit governments to take responsibility with the support of other social actors, to a suite of actions for change and improved environmental and sustainability outcomes[10]. They have led to regional plans and national strategies which embrace sustainability as a core concept.

Additional commitments have been taken up at the community level with Local Agenda 21 action plans[11] and Vision 20:20[12] initiatives emerging in various localities across the globe. Some corporate organisations and government agencies are also recognising their responsibilities in this area committing to organisational change processes (such as 'Sustainability Focused Organisational Learning'[13]) and reporting initiatives (such as Triple Bottom Line reporting[14]). Strategic actions are also taking place in a few educational institutions which are committing to programs (such as *Eco-schools* and *Sustainable Schools Initiative*[15]) and agreements (such as the '*Talloires Declaration*'[16] or the '*Copernicus Charter*'[17]) to address sustainability within their core business.

Underpinning these initiatives are discussions on what 'sustainability', 'sustainable development' or related terms really mean and whether they are indeed different. Some people, particularly from economically developed nations, prefer to use the term 'sustainability' rather than 'sustainable development', others opt for 'sustainable futures' or 'sustainable living'[18] (see Box 1.3). Interestingly the focus of many of these terms is 'quality of life' and the process of achieving sustainability is widely understood as one of defining and seeking a better quality of life[19] (see Box 1.4).

Authoritative documents refer to intergenerational equity, ecological sustainability and fair distribution of wealth, community participation and access to resources as key sustainability concepts associated with quality of life issues[25] (see Box 1.5). Underpinning them is a strong premise that both society and economy are dependent on a healthy environment to provide ecosystems services (see 'Focus On: National Visions for Sustainability' on page 8).

Despite agreement about these concepts, the notion of what a sustainable world looks like remains a contested one and the process of how to achieve sustainability remains to be negotiated (see Box 1.6). Nevertheless, the international organisations involved in sustainability since its inception have consistently argued that major problems cannot be solved from our current ways of living but will require a shift from traditional ways of thinking and acting upon environmental problems[26]. It is this, they believe which defines 'sustainability'. Such changes have significant implications for how society operates and plans for the future.

Mental Models

At the Johannesburg Summit, UNESCO called for new mental models as fundamental changes are required to the way we view and evaluate lives[27]. To achieve sustainability the mental models which have driven communities to unsustainable development need to be challenged. This involves questioning and reflecting upon actions and decisions as well as developing a deeper understanding

Box 1.3 Sustainability versus Sustainable Development

Not only is there debate about what constitutes *sustainable development* there is also division over the use of the word itself. Some people, particularly those in developed nations object to the term development. To them, it conjures up the vision of unrestrained development. John Smyth reminded us how during international negotiations leading up to Agenda 21, the word *sustainable development:*

> 'provoked objections form the policy makers in both industrialised and developing countries who suspect that it represents a 'green' attempt to get away with development, or that it disguises what is to be sustained, namely a 'northern' affluent lifestyle.'
>
> *Smyth (1995, p.11)*

It is for this reason that some people prefer to use the term *sustainability* as it is more often associated with issues relating to quality of life rather than merely urban development.

Box 1.4 Quality of Life

Quality of life features as an integral part of sustainability both in Australia and internationally. In Australia ecologically sustainable development has been defined as: 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.'

Commonwealth of Australia (1990, p.6)

Internationally, sustainable development has been defined as: 'improving the quality of human life while living within the carrying capacity of supporting eco-systems.'

IUCN/UNEP/WWF (1991, p.6)

'Sustainable development, sustainable community, sustainable industry, sustainable agriculture. You may have heard these words used in many different ways, but what does "sustainability" really mean and how can you tell if your community is sustainable? Sustainability is related to the quality of life in a community - whether the economic, social and environmental systems that make up the community are providing a healthy, productive, meaningful life for all community residents, present and future.'

Sustainable Measures (2005, p.1)

Box 1.5 The Emergence of Sustainability as a Concept

Notions of sustainability began to emerge on the international agenda as early as 1972, although it did not gain an identity as a concept until the 1980s. The '*World Conservation Strategy*'[20] and the '*Brundtland Report*'[21] have been often cited as the key texts which initiated this process of social change. However, it was the Rio de Janeiro Summit in 1992 which accelerated the process and secured the beginnings of international cooperation on this area[22]. '*Agenda 21*'[23], was among the key documents signed at Rio which committed countries to promoting sustainability through a variety of measures, including education. The recent World Summit on Sustainable Development (WSSD), held in 2002, highlighted how current actions are leading to environmental degradation, poor quality of life and associated human suffering. Its '*Implementation Plan*'[24] reinforced the importance of global governance for sustainability and committed governments to actions spanning over ten years.

Box 1.6 Paralysis by Analysis

Although an exact definition of sustainability may be contested, there are many who argue that action towards sustainability should not be withheld until a consensus definition is found. It has been argued that the preoccupation to debate and define the term has resulted in delays in key changes essential for a more sustainable society. This focus on the *debate* at the expense of *action* is termed 'paralysis by analysis' and has been the dominant trend until recent years[28].

It has been suggested that one way to avoid this paralysis is to engage in processes of negotiating visions of sustainability which should be the first step. Others cite dialogue, reflection and negotiation of appropriate action with stakeholders as the starting point.

of our social dispositions (see 'Focus on: A Shift in Thinking' on page 5).

In effect, sustainability involves more than just understanding how society, environment and economic systems are linked, which is the aspect of sustainability which is more immediately associated with the concept. Sustainability is often graphically represented by three overlapping circles each labeled 'social', 'environmental' and 'economic dimensions'[29]. Although sustainability does promote systemic thinking[30], this graphical representation is a simplification of what sustainability is really about - which is more about transforming current systems than about merely linking these dimensions. Sustainability is about challenging our mental models, policies and practice not just about accommodating dimensions into current work or finding common ground between related programs.

Many groups have struggled to see this difference and have simply changed the label they use to describe their work rather than challenge their thinking and practice. More and more we are seeing the word 'sustainability' being added to the titles of programs, project, activities, departments or units, however, few have actually been redesigned. Many of those who have struggled to understand this difference often refer to the concept of sustainability as 'vague' or tend to interpret the word 'sustainability' literally. They are not familiar with the literature or thinking that underpins this concept or recognise the sustainability movement which represents a particular intention - envisioning and negotiating change rather than 'sustaining' the status quo.

Environmentalism vs Sustainability

Some countries, such as Australia, New Zealand and the United States have struggled to differentiate between environmentalism and sustainability. Keith Wheeler[33] argues that environmental groups have spent the last 40 years defining themselves against conservative values like cost-benefit accounting, smaller government, fewer regulations, and free trade and against anything that will have a negative impact on environmental agendas. However, he believes that they often fail to articulate a coherent morality or alternative vision necessary for sustainability to be achieved. His thinking borrows much from a recent publication '*The Death of Environmentalism*'[34] which has stirred a debate within the environmental community (see Box 1.7). The authors argue that the environmental movement has not evolved with the times, and continues to use the strategies of the '60s and '70s to fight, and for the most part lose, the environmental battles of today. This analysis could be applied to the recent events related to logging and forest protection in Tasmania. Michael Shellengburger and Ted Nordhaus go on to argue that 'we will never be able to turn things around as long as we understand our failures as essentially tactical, and make proposals that are essentially technical'[35].

Morgan Williams, the Parliamentary Commissioner for the Environment in New Zealand[36] has recognised this view and explicitly summarised the difference between environmentalism and sustainability:

'The last two decades has seen a major shift in thinking from environmentalism to sustainable development. It has been suggested that environmentalism is mostly a movement against some things - for example stopping pollution and other harmful activities - while sustainable development takes a more proactive approach towards positive outcomes. It is very forward thinking. It aims to do things differently in the first place, instead of just cleaning up the symptoms of underlying problems.'

Progress Towards Sustainability

No country is sustainable or has come close to becoming sustainable. There is no proven recipe for success. As Prescott Allen reminds us 'making progress towards (sustainability) is like going to a country we have never been to before…We do not know what the destinations will be like, we cannot tell how to get there'[42] (see Box 1.8).

Given this context, the international community has come to recognise that **sustainability is essentially an ongoing learning process that actively involves stakeholders in creating their vision, action and reviewing changes**[43]. UNESCO released a document at the World Summit for Sustainable Development entitled '*From Rio to Johannesburg: Lessons Learnt from a Decade of Commitment*'[44] which acknowledges that achieving sustainability is indeed a process of learning (see Box 1.9) which helps us grow in understanding sustainability, human motivations and visions and thus how to progress towards sustainability.

This interpretation of sustainability supports the use of learning approaches such as mentoring, facilitation, participative inquiry,

A Shift in Thinking

Focus On:

'Putting Canada on a path towards long-term sustainability will require a shift in thinking and new approaches to making economic, social and environmental decisions. It will require moving towards a future shaped by a strong knowledge base that puts human and natural capital on an equal footing with economic capital, informs public debate and ensures integrated decision-making.'

Environment Canada (2004, p3)

'It is absolutely essential to change the way we think. All other attempts at change will fail if we do not transform our thinking.'

Milbrath (1996, p.188)

'Increasingly, the paradigm of *progress* is being challenged by that of *transformation*: the conviction that we are still 'on track' to a better future by the conviction that we are now straying ever further off it; the view that economic, social and environmental problems are 'glitches' we can iron out of the system by the view that the problems are systemic and require whole-system change.'

Eckersley (1998, p.5)

'Unfortunately, few executives in other businesses grasp the fundamental paradigm shift that sustainable development requires. Blinded by long-held mental models, they fail to fundamentally alter the ways in which their organisations produce goods and services. They believe that sustainability simply involves better controls, marginal improvements or the 'efficiencies' within their existing business models.'

Doppelt (2003b, p.2)

'Such new paradigms involve embracing uncertainty in a rapidly changing world and realising that unless there is deep change, there may not be any significant future to talk about…sustainable development…provides a radical challenge, which an organisation can grasp if they are willing to challenge power and resources to develop new structures in a sustainable way. At the heart of that reconstruction is the need for organisations to define and develop new systems which will lead the organisation to develop flexible ways of carrying out strategic delivery…there is a need for change in the way an organisation does business.…Essentially, this means changing the paradigm … in a way which is consistent with sustainable development and all the various elements of that concept.'

SustainUs (2005)

'Sustainable development requires active and knowledgeable citizens, and caring and informed decision makers capable of making the right choices about the complex and interrelated economic, social and environmental issues human society is facing. To achieve this requires the broader process of social change known as social learning, or what the OECD calls 'enhancing societal capacity for the environment'. This involves not only specific education and training programmes but also the use of policy and legislation as opportunities for teaching and encouraging new forms of personal, community and corporate behaviour. Social learning also involves reflection… on the appropriateness of the mental models and assumptions that have traditionally guided thinking and behaviour.'

UNESCO (2002, p. 7)

Box 1.7
The Death of Environmentalism: A Response from the Environmental Movement

Green leaders have countered the arguments that environmentalism is at death's door, saying that the claims are greatly exaggerated. However, before the book was released, a debate was emerging in the environmental community about how the environmental movement could be more effective. In response to the book Carl Pope, executive director of the Sierra Club argues that these assertions have set the environmental debates back, not moved it forward[31]. Dan Carol, believes that the arguments contained in this book are merely a provocative device and that essentially it comes down to a difference in philosophy about how to catalyze change. '*Do you catalyze change by creating destruction, or by showing the way? Do you want to highlight failure or do you want to highlight success?*' In his opinion you can't be both a provocateur and a movement builder[32].

Box 1.8
Progress Towards Sustainability

In an attempt to assess progress towards sustainability '*The Wellbeing of Nations*' reported that:

'…at present, no country is sustainable or even closer…..Nobody knows how to meet these new demands. There is no proven recipe for success. In fact, no one has a clear sense of what success would be. Making progress towards ways of living that are desirable, equitable and sustainable is like going to a country we have never been to before with a sense of geography and the principles of navigation but without a map or compass. We do not know what the destinations will be like, we cannot tell how to get there, we are not even sure which direction to take.'

Prescott-Allen (2001, p.2)

Box 1.9
A Process of Learning for Sustainability

'Since 1992, an international consensus has emerged that achieving sustainable development is essentially a process of learning. At major UN conferences of the 1990s, including those on human rights in Vienna (1993), population and development in Cairo (1994), small island developing states in Barbados (1994), social development in Copenhagen (1995), women in Beijing (1995), food security in Rome (1996), and human settlements in Istanbul (1996), the critical role of education was stressed. Just as we learnt to live unsustainably, we now need to learn our way out - to learn how to live sustainably.'

UNESCO (2002, p.7)

Box 1.10
Linking Learning and Sustainability

Learning is vital to motivate and manage meaningful change for sustainability and has been recognised in a variety of ways:

'Learning is a prerequisite if mankind is to be able to meet the challenges facing the world. What people learn and how they put it into practice is crucial for whether sustainable development can be achieved.'

Swedish Committee on Education for Sustainable Development (2004, p.1)

'This century may well be one of relearning on a grand scale - relearning how we Homo sapiens can sustain ourselves on a planet that has limits.'

Parliamentary Commissioner for the Environment, NZ (2004, p.4)

An empirical study has been undertaken in an attempt to construct models of institutions for sustainability. Recognising the role of learning and supporting adaptive management approaches to change, this research argues that:

'…sustainability is an ideal and not something likely to be fully achieved any time soon. It is a matter for ongoing social consideration at the most serious level, and requires mechanisms to accumulate experience and knowledge of decision-making so that learning may proceed into the far future'

Connor and Dovers (2002, p.10)

action learning and action research (see glossary) as a way of exploring the sustainability agenda. These approaches enable people to reflect on their experiences, learn how to make change and move forward. These concepts are not new to the organisational change literature which recognises that change which is collaborative and context specific (such as that sought by sustainability), must involve learning. Thus it is not surprising to find that learning based change has a strong premise in the organisational change for sustainability literature or that an organisation that is aligned with sustainability is often defined as a learning organisation[45] (see Box 1.10).

The Role of Education and Learning in the Transition to Sustainability

Since the Rio Summit, a number of documents have clearly valued the role of *education* and *learning* in the achievement of sustainability. However, interpretations of these terms, by the sustainability community, have evolved over time (see Box 1.11).

Initial interpretations focused on the education system and the importance of reorienting teaching approaches, curricula and examinations to address sustainability. These interpretations also focused on the importance of sustainability literacy and persuading people to embrace sustainability.

More recently, education in the context of sustainability is being understood as a process rather than a message or level which must be

achieved (see box 1.12). It is seen as a process which motivates and engages people in creating sustainable futures. It is interpreted not only as a process which *builds competence* but also as a *change strategy* which will assist people and organisations to move towards sustainability (see Box 1.13). A stronger focus on informal learning approaches has been accompanied with increasing use of the term 'learning' in place of 'education' within the sustainability discourse. This evolution has encouraged some environmental educators to rethink their role in achieving environmental outcomes. They have been challenged to consider how to adopt the two differing aspects of learning for sustainability approaches - capacity building and learning based change (see Box 1.14).

Capacity Building

Capacity building for sustainability is increasingly important in building knowledge and skills for sustainability as well as enhancing public participation in resolving issues. Capacity building consists of participative training which can take place through a course, workshop or in-situ mentoring support. The focus is on the development of the individual and/or the organisation.

The international literature confirms that learning for sustainability programs must be based on a clear understanding, not only of the current status of the environment, but also of the social and economic context within which our environmental decisions are made[48]. Often understanding this social context and its direct and

Box 1.11
Education as a Tool for Change

'Education not only informs people, it can change them. As a means for personal enlightenment and for cultural renewal, education is not only central to sustainable development, it is humanity's best hope and most effective means in the quest to achieve sustainable development.'

UNESCO (2002, p.8)

Box 1.12
Purposes of Education

'Sustainable development requires active and knowledgeable citizens and caring and informed decision-makers capable of making the right choices about the complex and interrelated economic, social and environmental issues human society is facing. To achieve this requires the broader process of social change known as *social learning*, or what the OECD calls 'enhancing societal capacity for the environment'. This involves not only specific education and training programmes but also the use of policy and legislation as opportunities for teaching and encouraging new forms of personal, community and corporate behaviour. Social learning also involves reflection - on the appropriateness of the mental models and assumptions that have traditionally guided thinking and behaviour.'

UNESCO (2002, p.7)

Box 1.13
Beyond Messages

'We hardly ever come across anybody who does not think that sustainable development in the broadest sense is a good idea and something which everyone should sign up for. We are not coming across resistance in that sense, so that leads us to believe that time spent exhorting people or persuading people is actually wasted really. What people are looking for is a way of finding out how it is that they can actually make a contribution themselves. They need to be shown that.'

Dr Andy Johnstone, Head of Education and Learning at Forum for the Future cited in House of Commons, Environmental Audit Committee (2005, p.13)

'Just throwing the term out at people does strike them dumb in a lot of ways and makes it really difficult, but if you can give them a hook then you can draw them into a wider arena and a broader understanding and that, from our experiences is a much better way to get people to understand about this big term…it is a way of thinking…we think about it as being a tool to help in the decision-making process.'

Rebecca Dawson cited in House of Commons, Environmental Audit Committee (2005, p.16)

Box 1.14
Challenging Mental Models Through Education

'Education for Sustainability is recognized as a key tool in achieving the goals of ecological sustainable development. It is vital to help us not only build motivation and capacity to take action but also to challenge the mental models which have driven us to unsustainable development. In order to challenge the mental models which underpin our actions and decision-making processes we need to be given opportunities to reflect and learn from experience and to question our current predispositions. This involves more than merely developing environmental knowledge or literacy.'

Cooke and Tilbury (2004, p.4)

Focus On:

National Visions for Sustainability

Canada

'Sustainable development is about how to meet the needs of Canadians today, without compromising the ability of future generations to meet their needs. It is not an end point, but an approach to decision-making. It recognizes that social, economic, and environmental issues are interconnected, and that decisions must incorporate each of these aspects if they are to be good decisions in the longer term. It is an approach that will help Canadians achieve a healthy environment, a prosperous economy, a high standard of living, and a vibrant and just society for current and future generations.'

Environment Canada (2004, p.iv) Sustainable Development Strategy 2004-2006.

The Netherlands

'Social prosperity amounts to more than just material progress. Striking a balance between social progress and the natural environment is at least as important. The balance between material progress, social improvement and the quality of the living environment provides the key to sustainable development. If that balance is disturbed this will lead in due course to distorted growth, both spiritual and material. Unbridled growth and waste must be avoided where the available space and ecological assets are shared by many people in the Netherlands. That calls for rules but, above all, for the encouragement and direction of developments.'

Government of Holland (2002) 'Working on confidence: a matter of engagement' Strategic agreement for CDA, LPF, VVD coalition Cabinet 3 July 2002.

Japan

'This is the country where our actions for environmental issues will boost the economic growth while the resultant economic growth will further improve the environment…members of the society must make a concerted effort to have a desirable vision for the future, develop a feeling of mutual trust and cooperate with each other, share roles, and steadfastly fulfil their own social responsibility as a consumer, educator, business operator, government official, etc….The vision… declares 2025, the year when the children born in this fiscal year will celebrate the coming-of-age, as one of the goal lines of the efforts to make Japan a "healthy, rich and beautiful environmentally-advanced country.'

Ministry of the Environment, Japan (2004, p1) 'Vision for a Virtuous Circle for Environment and Economy in Japan: Toward a healthy, rich and beautiful environmentally-advanced country'

Poland

'Poland is becoming a country, which respects the need for a rational use of Earth's resources. This is being done through limiting the use of non-renewable resources and through abandoning tendencies and actions, which impoverish the world's natural assets….. We should also alter our views on progress and prosperity, putting more attention on people's spiritual needs. Caring for the quality of life and our surroundings comes with the obligation to address numerous problems associated with urban and industrial development, immoderate use of vehicles and information technology, excessive exploitation of ecosystems, or the search for new energy sources. Another obligation is to eliminate the causes and consequences of famine, intolerance, violence, natural disasters, and negative demographic processes.'

Ministry of the Environment, Poland (2001, p7) Through Education to Sustainable Development: A national environmental education strategy,

New Zealand

'There is a huge opportunity for New Zealand, a tiny nation of four million innovative people enjoying stunning landscapes and a benign climate, to learn along a better pathway. We could, and should, be the first in the world to become a truly environmentally sustainable nation. To do this, we need learning that is focused on quality of life, and on the opportunities to design and craft more sustainable ways of achieving it. We need to learn why it is important to live within nature's limits and to understand the many factors that contribute to unsustainable practices and lifestyles. This learning needs to be deeply embedded in all our formal and informal streams of education. In fact, it needs to be a core part of learning across society, necessitating a metamorphosis of many of our current education and learning constructs.

The word 'sustainability' is often used in very different ways to mean vastly different things. Sustainability in this report is the goal of sustainable development - an unending quest to improve the quality of people's lives and surroundings and to prosper without destroying the life-supporting systems. Like other important concepts such as 'equity' and 'justice' sustainability can be thought of as both a destination and a journey.'

Parliamentary Commissioner for the Environment (PCE), NZ (2004, p.4) See Change: Learning and education for sustainability.

United Kingdom

'Our vision of the future is of a world in which climate change and environmental degradation are recognised and addressed by all nations and where low carbon emissions and the efficient use of environmental resources are at the heart of the whole way of life. Where here, in the UK, rural communities are diverse, economically and environmentally viable, and socially inclusive with high quality public services and real opportunities for all. A country where the food, fishing and farming industries are not dependent on output related subsidies, but work closely together and with Government to produce safe, nutritious food which contributes to consumer choice and the health of the whole nation. A place where we manage the land in a way that recognises its many functions…; where we seek to promote biodiversity on land and in our seas...Through the practice of sustainable development, economic, environmental and social, we will achieve this vision.'

Department of Environment, Food and Rural Affairs (DEFRA), UK (2004, p.i) Working for the Essentials of Life.

Whilst the context of where, and how, these visions are applied vary from one nation to the next they all address certain core concepts such as intergenerational equity, ecological sustainability, fair distribution of wealth, community participation and access to resources. All of these concepts are universally applicable irrespective of geography, politics or national wealth and are the backbone of achieving a better quality of life. Understanding the importance of these concepts is the first stage, the second, and most critical action is to use them to create a national vision of sustainability. At the strategic level, this stage is considered critical to the achievement of sustainability and its worth has been recognised and acted upon by these leading nations.

Australia does not have a simple articulated vision for sustainability; it does however have many authoritative documents as well as official Australian and state government documents which offer sustainability frameworks. These include: '*Hope for the Future: The Western Australia Sustainability Strategy*'[37]; the '*Sydney Metropolitan Strategy*' [38]; and '*Our Environment, Our Future: Victoria's Environmental Sustainability Framework*"[39]. The closest Australia has come to a national vision for sustainability is the '*National Strategy for Ecological Sustainable Development*'[40] developed in 1992 and endorsed by the Council of Australian Governments. The strategy identifies core objectives and guiding principles and sets out the broad strategic framework to guide government policy and decision-making. However, the *National Strategy* has not been as influential as anticipated. Critics point to how it did 'not tell us what we have to do to achieve ecological sustainability'[41].

Box 1.15
Learning based Change for Sustainability in LA21

Members of a local community come together to plan for a better quality of life within their area. In order to move towards a better future, resolve existing conflicts and develop realistic action plans, those involved learn, reflect and negotiate visions for their community. Skilled facilitators provide informal structured learning opportunities during meetings and create a culture of participation, engagement and ownership necessary for implementing sustainability at the local level.

Box 1.16
Defining Education and Learning

'Learning is a process that influences the way people think, feel and act, We learn through experiences throughout our entire lives. Learning happens consciously and subconsciously. We often learn by interacting with people and our environment.

Education, of course, is closely connected to learning, The word 'education' comes from the Latin words *educare*, meaning to rear or foster and *educere* meaning to draw out or develop. Over time, its meaning has changed significantly and today its usually associated with the formal education system. But because we learn throughout our lives, it's important to look beyond education in schools…it is important to remember that we learn not just as isolated individuals. Learning and education takes place within a social context, and organisations are also involved in learning.'

Parliamentary Commissioner for the Environment, NZ (2004,p.1)

indirect links with environmental outcomes is not an easy task[49]. Capacity building therefore plays an important role in developing people's ability to understand sustainability in an integrative way and to develop skills to enact change. Inherent in this ability is the individual's values, skill set, motivation and capacity to effectively contribute to processes of change.

This type of capacity building goes beyond developing environmental literacy or sustainability awareness. It builds competencies in individuals, groups and organisations to recognise the systemic way in which the world works and the fundamental changes required to the way people view and evaluate their lives[50]. This form of capacity building challenges linear models which assume that increased levels of knowledge or positive attitudinal change leads to 'behaviour' change. People, and indeed sustainability are complex. Issues are interwoven and understanding the social contexts within which decisions and actions are taken is vital. These concepts associated with capacity building are explored further in section 1.3 of this volume.

Learning Based Change for Sustainability

Learning based strategies consist of an informal collaborative but structured process which uses action learning, reflection and change to improve the effectiveness of an organisation, program or action plan.

This approach acknowledges that it is difficult to educate for sustainability when the conceptual pathway to sustainable development is not clear. The quest for sustainability demands new approaches and new learning rather than focusing solely on new knowledge.

Learning for sustainability provides opportunities for people to engage in reflection upon preferred futures and defining their vision for sustainable development. From this process of envisioning, individuals and groups can then determine their own relevant and realistic pathway to sustainable development. Important parts of the envisioning process are sharing these visions and pathways, learning of other ideas and solutions and attempting to resolve differences in expectations.

This *learning based strategy* approach is used by some educators in LA21 processes (see Box 1.15) and other planning initiatives where participants are seen as learners as well as contributors. Facilitators provide informal learning opportunities, whereby participants are not only brought together to be consulted or share opinions they are also encouraged to explore, critically reflect and negotiate action plans for sustainability. Learning occurs, though it may not be an explicit purpose, as participants clarify their own values, ideas and plans for action during a well facilitated process. This means that not only will participants personally gain more from the process, but also, the resulting outcome will be a better one - more realistic and effective.

A *learning based strategy* approach has also proved valuable to organisations seeking to realign themselves towards sustainability. Some corporate organisations have moved on from a *compliance approach* (i.e. where environmental considerations are only of concern if obliged by law)

Tracing Education through Key International Sustainability Documents

Focus On:

- Chapter 36 of '***Agenda 21***', the action blueprint from the **Rio Earth Summit** in 1992, advocated the pivotal role of education in the achievement of sustainability. The frequency of the use of terms 'education', 'public awareness' and 'training' within Agenda 21 positioned education at centre stage in building a sustainable future. It was seen as fundamental for achieving progress in the other chapters.

- At the time countries from both North and South agreed that education was critical for promoting sustainable development and interpreted it as a process for increasing the awareness and ability of the people to address environment and development issues[46].

- By the time of **Rio plus 5** in 1997, UNESCO reported that education seemed to be 'the forgotten priority of Rio' since there had been little national reporting of action or global funding. It was at this time that interpretations of 'education' here began to move beyond awareness raising towards capacity building. Entering the education discourse were also interpretations of education as a critical policy instrument for change.

- In 1996, the **Commission for Sustainable Development** (set up by the UN to monitor the follow-up decisions taken by the Earth Summit) concluded during its 4th Session, that 'in order to change unsustainable production and consumption patterns and lifestyles, it (is) essential to give great emphasis to the role of education for sustainable development'[47]. It reiterated the key role that formal education systems must play in the achievement of sustainable development but also stressed the need to recognise the role of informal education in the community and in the family. These statements reflected a broader interpretation of education within this context which was gaining ground across the globe.

- The momentum stimulated by the Rio Earth Summit in 1992 and '*Agenda 21*' was revitalised at the **World Summit for Sustainable Development** which took place in Johannesburg in 2002. Discussions at the Summit reflected how education in the context of sustainability had evolved from former years, where it was mostly about reorienting formal systems and training, towards capacity building and learning based strategies for change. It was no longer just about becoming sustainability literate or receiving qualifications in this area. It was also about understanding education as an approach to making change within our families, communities, organisations and authorities.

- The Johannesburg Summit culminated in the UN declaring the **Decade of Education for Sustainable Development**, which is to be celebrated from 2005-2014. The Draft '*International Implementation Scheme*' for the Decade interprets education as a strategic process which can challenge unsustainability in our societies.

Box 1.17
Commitment to Education

'Whilst we have reservations about the inappropriate use and, indeed, overuse of the term 'sustainability' we have to conclude that what holds back the progress of education in environmental matters is not really a problem with terminology, whether it be Sustainable Development, Education for Sustainable Development, Environmental Education or something else, but rather its application, and the fundamental lack of commitment to the basic principle on the part of those with responsibility for promoting it and educating us about it.'

House of Commons Environmental Audit Committee (2005, para. 23)

to one of improving environmental *performance* (i.e. greater resource efficiency and reduced costs). Some have taken a step further and embraced *social responsibility* (i.e. establishing a culture that is committed to meeting stakeholder's interests and needs - not just shareholder's needs). However, the more forward thinking organisations recognise that to genuinely embrace sustainability requires transforming the governance structures of an organisation and developing a culture of a *learning organisation*[51]. *Learning based strategies* are used to achieve this goal. In this context, internal and external stakeholders are provided with learning opportunities to not only reflect upon their role in achieving sustainability within the organisation and how to influence change, but also to help define a vision of sustainability for the organisation.

Underpinning learning based approaches to sustainability is the recognition that sustainability is a collaborative learning process which encourages exploration of *new ideas and tools* as well as *critical reflection upon experience* and assumptions that influence change towards sustainability.

Education or Learning for Sustainability?

Morgan Williams, the New Zealand Parliamentary Commissioner for the Environment argued that 'subtle shifts in language often conceal more fundamental shifts in meaning and understanding. It is therefore important to consider how words are used and why'[52]. This report often uses the term 'learning for sustainability' to refer to an approach which is relevant to a variety of areas of learning, including Environmental Education (EE).

Although, the terms 'education for sustainability' and 'learning for sustainability' can be used interchangeably, there are subtle differences in meaning (see Box 1.16). Some educators choose specific terms to focus attention upon, or differentiate between, different aspects of these processes and thus a variety of labels are used to describe variations in a process (see 'Focus On: What is in a Label?' on page 15). What matters is not what label is used, but what is done as part of this process and how much commitment there is to dedicating time and resources to this process for sustainability (see Box 1.17).

The UN Decade of Education for Sustainable Development

Despite recognition of the critical role that education and learning must play in the achievement of sustainable development at the global level, the full potential of these processes has not been realised to date. For example, the Rio Summit called for all countries to develop and implement an education for sustainable development strategy by 2002. To date, only a handful of nations have drafted strategic frameworks for advancing this process at the national level[54].

It was the lobbying efforts of many international governmental and non-governmental organisations in the lead up to the World Summit on Sustainable Development which raised the profile of education and ensured it featured significantly within the Plan of Implementation agreed at Johannesburg. Those at the World Summit not only confirmed its importance but also recommended the United Nations General Assembly consider adopting a Decade of Education for Sustainable Development.

At its 57th Session, 2002, the UN General Assembly adopted a Resolution 57/254 to declare the Decade of Education for Sustainable Development (UNDESD) from 2005 to 2014 (see Box 1.18). The basic vision of the Decade is a world where everyone has the opportunity to benefit from education and learning for social change. This translates into five objectives for the Decade, to:

a) give an **enhanced profile** to education and learning in change towards sustainable development;

b) facilitate **links, networks and interaction** among stakeholders of education on sustainable development issues;

c) provide a space and opportunity for **refining and promoting a vision of change** towards sustainable development - through learning and education;

d) foster **increased quality of teaching and learning** in education for sustainable development; and

e) develop **strategies** at every level to **strengthen capacity** in education for sustainable development.[55]

The UN General Assembly Resolution 57/254, designated UNESCO as the lead agency to promote the Decade and requested that UNESCO:

i) develop a draft International Implementation Scheme to clarify it's relationship with existing educational processes including 'Education for All';

ii) develop the scheme in consultation with the UN, international organisations, governments, NGOs and other stake holders; and

iii) provide guidance for governments to incorporate concrete measures to promote ESD in national education plans.

In August 2004, UNESCO released its '*Draft International Implementation Scheme*'[56]. This scheme identified a number of priority areas including poverty alleviation; gender equality; health promotion; the conservation and protection of the natural resource base upon which social economic development depends; rural transformation; human rights; peace; international understanding; cultural and linguistic diversity and the potential of Information and Communication Technologies (ICTs). The draft Scheme was consolidated into a shorter form providing more of a strategic focus on the implementation of the Decade and this was approved at the UNESCO Executive Board session in September 2005. The Asia-Pacific region released its strategy for the Decade in July 2005[57] (see Box 1.19). This was based on the concepts of the draft scheme and on the needs and priorities of stakeholders in the region.

The UNESCO Draft Implementation Scheme strongly advocates for partnerships in the Decade's implementation. It argues the need and outlines a partnership approach to the development of action plans. It sees partnerships

Box 1.18
The Aims of the Decade

'The outcomes of the Johannesburg Summit and the establishment of a Decade of Education for Sustainable Development affirm the need to integrate sustainable development into education systems at all levels in order for education to be a key agent for change. The Decade aims to promote education as the basis for sustainable human society and to strengthen international cooperation towards the development of innovative policies, programmes and practices of education for sustainable development (ESD).

Governments have been invited to consider the inclusion of measures to implement the Decade of Education for Sustainable Development in their respective educational strategies and action plans by 2005, taking into account the international implementation scheme to be prepared by UNESCO.'

UNESCO (2003a, p.1)

Box 1.19
Asia-Pacific Regional Strategy

The working paper for the Asia-Pacific Regional Strategy for Education for Sustainable Development (ESD) serves to guide the implementation of ESD throughout the region. The Strategy is an open document designed to be adaptable for revision to the changing needs of its stakeholders. Using collaboration and networking as underlying key elements the Strategy explores the following core issues of ESD which have been drafted on the basis of various initiatives and events in the region:

- Information and Awareness
- Knowledge Systems
- Environmental Protection and Management
- Peace and Equity
- Local Context
- Transformation
- Culture
- Cross Cutting Issues and Themes
- Health
- Environmental Education
- Engagement of Leaders

UNESCO Asia and Pacific Regional Bureau for Education (2005, p.4)

as important not only for enhancing participation, ownership and commitment but also for the successful implementation and maximum impact of activities for the UNDESD. A key outcome sought by the Decade is the integration of education for sustainable development into all development planning (see Box 1.20).

The Decade will offer further opportunities for environmental educators to reflect on, share experiences of and learn about the implications of sustainable development. By the end of the Decade it will be important to assess how far education and learning have contributed to transforming the way organisations, businesses and personal and collective lives have shifted towards sustainability.

Box 1.20
Challenges of the Decade

UNESCO has identified significant challenges for the Decade:

- Better integration of education for sustainable development into relevant development policies and national action plans. This involves improved coordination among the concerned Ministries.
- Development of guidelines on education for sustainable development.
- Emphasising education for sustainable development in nonformal as well as formal education.
- Strengthening institutional capacity building and professional development processes for improved planning and implementation of education for sustainable development.
- Increasing monitoring, evaluation and reporting of sustainable development education initiatives and their outcomes and impacts.
- Increasing attention to the sustainability of initiatives so that policies, programmes and activities are embedded in long-term education plans and financial arrangements.'

UNESCO (2003, p.6)

What is in a Label?

Various names have been used by policy-makers and educators to acknowledge the shift towards sustainability in Environmental Education.

Sometimes, the terms 'Environmental Education' and others listed in Box 1.21 are used interchangeably to describe similar work. Sometimes there are differences in the focus and approach of initiatives.

Some use the term ***learning*** rather than 'education' to define their work because often education is associated with schools, whereas the broader concept of learning refers to it taking place at all levels and in all contexts - outside schools, within workplaces and in the community.

Many use the term ***sustainability*** rather than 'sustainable development'. In Australia, the term 'sustainability' has gained greater currency as it is seen as more relevant to a country which has already 'developed'. However, critics are concerned that the issues relating to planning, consumption and broader quality of life associated with 'development' are overlooked in preference for ecological and resource management issues.

Many retain the word ***Environmental Education*** because they believe that 'Education for Sustainability' is Environmental Education but with a more specific focus. They perceive it as a new approach to Environmental Education. Others who choose to use the term 'Education for Sustainability' believe that it is important to move away from traditional Environmental Education practices which have focused on creating positive environmental experiences with nature, developing ecological knowledge and changing values or attitudes of individuals to focus more on sustainable actions and lifestyle choices and systemic, rather than individual, change needed to move to a sustainable society.

The term ***sustainable education*** popularised by Stephen Sterling[53] puts the emphasis on the quality of education and suggests the need for culture change in education based around an ecological and systemic view. This term has mostly been used to refer to formal education. Many use the term ***sustainable futures*** to emphasise the importance of futures thinking and looking forward through a process of education.

In this series, the term ***learning for sustainability*** is used and is understood to be an approach to EE. It is treated synonymously with the terms 'education for sustainability' or 'education for sustainable development'. The authors do however, distinguish between education (or learning) *about* sustainability (developing understanding and awareness) and education (or learning) *for* sustainability (the process of engaging people in actions toward sustainability). Learning for sustainability aims to go beyond individual 'behaviour' change and seeks to engage and empower people to implement systemic changes.

Box 1.21
Labels

'Environmental Education for a Sustainable Future'
Environment Australia (2000); Woods (2004).

'Learning for Sustainability'
NSW Government (2002); Government of Canada (2002); Parliamentary Commissioner for the Environment, NZ (2004).

'Education for Sustainability'
Huckle and Sterling (1996); UNSW (1999); Tilbury and Wortman (2004).

'Education for Sustainable Development'
IUCN (2003); UNESCO (2004); UNECE (2004); Malone et al (2004); Tilbury (2004).

'Education for a Sustainable Future'
UNESCO EPD (1997); Fien (2001)

'Sustainable Education'
Sterling (2001).

1.2 The Influence of Sustainability on EE

The language of sustainability crept into the discourses of environmental educators as early as the 1980s. This can be linked to the influence of the 'education for sustainable development' agenda arising out of international efforts led by UNESCO, IUCN and OECD[59]. However, it took some twenty years before this influence was seen more widely in EE programs and practice[60].

In an initial stage, environmental educators' efforts to address sustainability were limited to bringing socio-cultural and economic dimensions into the *content* of their work. Their *approach* to teaching and learning about the issues had not changed significantly and the rhetoric of education 'for' the environment, which was gaining increasing support within the EE community, had not been translated into practice[61]. This meant that learners were developing increasing awareness about the complexity of environmental issues and links with sustainability but they were not necessarily developing the 'critical' skills to respond to the challenge of sustainability (see Box 1.22).

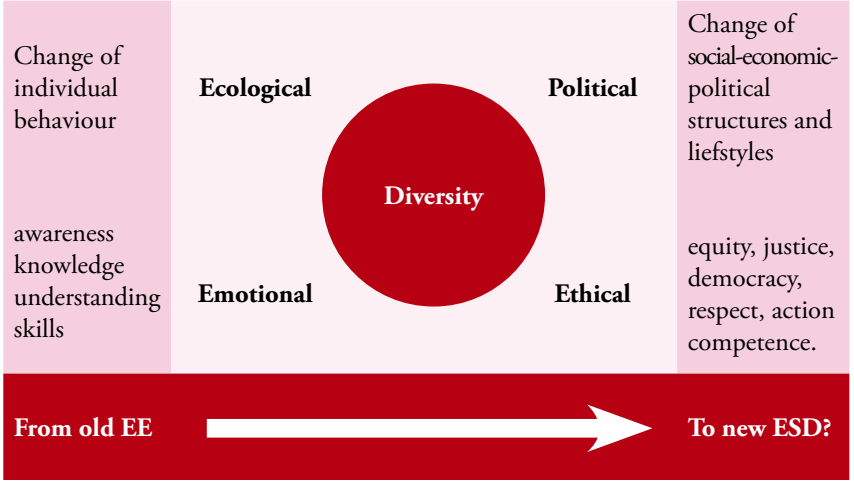
It was not until the early 1990s that the implications of the 'for' approaches to EE in terms of pedagogical change were understood more widely. Some began to ask questions as to whether these approaches were merely broadening the scope of EE or questioning its underpinning paradigm (see Figure 1.1). Others took issue with their influence, interpreting the word 'for' literally and thus labelling them as

Box 1.22
Traditional vs Critical Approaches to EE

Traditional	Critical
• Passing on knowledge and raising awareness of issues	• Understanding and getting to the root of issues
• Teaching attitudes and values	• Encouraging values clarification
• Seeing people as the problem	• Seeing people as agents of change
• Single Actions	• Learning for Change
• More focus on individual and personal change	• More focus on structural and institutional change
• Integration	• Innovation
• Problem-solving	• Creating alternative futures
• Sending messages	• Creating opportunities for reflection, negotiation and participation

Adapted from Tilbury (2004c)

Figure 1.1
EE in Transition: Broadening the Scope or a New Paradigm?



Hesselink et al (2000, p.14)

propaganda or indoctrination rather than education[62] (see Box 1.23). Indeed, Bob Jickling wrote an article where he argued he did not want his children to be educated for sustainability[63]. In this article he fuelled fears that sustainability would be promoted as a dogma rather than a contested concept to be explored. This lead to a barrage of articles from established and internationally reputed environmental educators who clarified that the focus of the 'for' approaches to EE was on the development of critical thinking, independent thought as well as action and participation skills to respond to sustainability issues. The word 'for' they argued was not to be interpreted literally. Underpinning these approaches was a need to move beyond awareness raising and development of knowledge 'about' sustainability towards more participatory and empowering approaches[64]. As the discourse associated with the 'for' approaches became increasingly present within the international literature coming out of IUCN, OCED and UNESCO, acceptance grew within the EE community[65]. Education and learning for sustainability signalled a new approach (see Box 1.24), which would challenge thinking and practice in EE and which faced structural barriers common across sectors and cultures (see Box 1.25).

The learning for sustainability approach examines how people, organisations and institutions can live in sustainable ways[66]. It is about empowering people to contribute to a better future through mindset changes, critical reflection and building of new skills. It goes beyond awareness raising, the challenging of values and attitudes,

Box 1.23
Education *for* the Environment

Education *for* the environment moves beyond education *in* and *about* the environment approaches (see glossary) to focus on equipping learners with the necessary skills to be able to take positive action.

The education *for* the environment approach promotes critical reflection and has an overt agenda of social change. It aims to promote lifestyle changes that are more compatible with sustainability. It seeks to build capacity for active participation in decision-making for sustainability.

In theory, there is little difference between this approach and the learning for sustainability approach to EE. Both are associated in the literature with 'critical' approaches to EE.

In practice, however, education *for* the environment is often interpreted as the involvement of learners in one-off events or individual actions (e.g. tree planting, picking up litter). They often do not equip learners with the skills to get to the root cause of unsustainability.

Box 1.24
Changing Approaches to EE

'In fact, sustainable development calls for additional and different processes than those traditionally thought of in education. The quest for sustainability demands new approaches to involve people rather than convey just a body of knowledge'

Earth Year Report (2002, p.12)

'…'linear' communication and information campaigns are least effective…don't assume that information leads to awareness or awareness to action.'

House of Commons, Environmental Audit Committee (2005, p.16)

'Education for Sustainable Development is an emerging but dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to assume responsibility for creating a sustainable future.'

UNESCO (2002, p.1)

'Education for sustainability provides a tool to assist and engage us in negotiating this future and deciding the consequences of our decisions. This means that education is more than the traditional practice of EE, which focuses on teaching and learning about, in and for the environment. Instead, education for sustainability seeks a transformative role of education, in which people are engaged in a new way of seeing, thinking, learning and working.

People are not only able to explore the relationship between their lives, the environment, social systems and institutions but also to become active participants and decision-makers in the change process.'

Tilbury and Wortman (2004, p.6)

Box 1.25
Barriers to Implementing Learning for Sustainability

- 'the dominant reductionist approach to understanding which emphasises separate subjects and abstract non-localised knowledge;
- the rise of market-based values in education which place emphasis on education in the service of the globalised economy;
- lack of awareness or understanding of learning for sustainability by both policymakers and practitioners;
- structural inertia in educational systems, particularly in the formal sector; and
- the in-built resistance of paradigms to fundamental change.'

Sterling (in press)

Box 1.26
Attitudes and Values in EE

The world's first intergovernmental conference on EE was organised by the UNESCO in cooperation UNEP and was convened in Tbilisi, Georgia (USSR) from October 14-26, 1977.

The Conference Declaration endorsed by delegates identified a key aim of EE as that of helping: 'social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection.'

Tbilisi Declaration (1977 p.1)

problem-solving or the development of action skills usually associated with EE[67].

Learning for sustainability challenges EE in a number of ways:

a) Getting to the Root of the Issues.
Traditionally, while citizens have been active in the alleviation of environmental problems, they have not addressed issues of sustainability at source[68]. Learning for sustainability approaches challenge environmental educators to think beyond awareness raising and go beyond involving learners merely in one-off activities such as cleaning-up or the planting of trees. They encourage learners to develop critical and systemic thinking skills, enabling them to get to the core of the issues. This reflects the major shift in thinking from environmentalism to sustainability.

It was argued earlier that environmentalism is mostly a movement against some things - for example, stopping pollution and other harmful activities - while sustainable development takes a more proactive and systemic approach towards positive outcomes[69]. It aims to do things differently in the first place, instead of just cleaning up the symptoms of underlying problems or tackling end of the pipeline issues. Dealing with the issue at source is an important aspect of this new approach to EE. Critical and systemic thinking play an important part in assisting people to identify the root of the issues and to work actively towards trying to address these.

Traditional approaches to EE have in practice, focussed on raising awareness and passing on important information about the issues and often involving people in specific actions. Learning for sustainability takes this a step further, it provides opportunities to reflect critically on information and experiences so that it can inform decision-making and enable sustainable practice. Section 1.3 of this volume explores this in greater depth.

b) A Move Away from Attitudes and Values.
The objective of acquiring a specific set of values and attitudes for the environment was deeply engrained within the EE discourse in the early years (see Box 1.26). Learning for sustainability does not engage directly with this objective. Instead, its focus is on developing thinking, clarifying values and enhancing participation skills. Some environmental educators have disputed whether it is possible, or right to, change a values system or indeed, whether there is any correlation between the values people articulate and their actions[70] (see Box 1.27). People are complex and there are often inconsistencies between their values and actions. For example, a person might drive their car to work even though they have environmental values and concerns about their contribution to climate change. There is no evidence that a particular values set will correspond with a set of specific actions.

Similarly there is no direct link between those who have an affinity with nature and natural environments and their ability to contribute to sustainability within their personal and professional lives[71]. Having deeply engrained values for the environment does not mean that one has the competence to be engaged in effectively contributing to change for sustainability. This is an assumption that also underpins some current EE

programs. Volumes 2 and 3 of this series provide examples of this.

A learning for sustainability approach recognises these assumptions which underpin traditional approaches to EE and instead focuses on clarifying values (see Box 1.28) and empowering learners to develop competence to make changes in social settings to address sustainability[73].

c) Seeing People as Agents of Change rather than as the Problem.
Some EE programs are based on the premise that people's actions need to be 'corrected' in order to address environmental and sustainability issues. They use strategies to modify people's behaviour and treat people as the problem. Learning for sustainability adopts a different approach which sees people as agents of change who can be empowered to create alternatives to the current situation. The focus is on promoting opportunities which effectively build people's capacity as agents of change in working towards sustainability[74].

Learning for sustainability does not rely on experts to determine how people should behave or how they should think, rather it promotes the learner's active engagement in decision-making and developing policy. This helps people gain ownership of the decisions, acceptance of the policy and commitment to the actions chosen. Bjarne Brunn Jensen's work has focused on mapping this shift between seeing people as the problem and seeing people as agents of change (see box 1.29). He argues that whilst behaviour may be seen as a predetermined outcome, an action is directed at solving a problem and is decided upon by those preparing to carry out the action[77]. These ideas are further explored in volumes 2, 3, 4 and 5 of this series.

d) From Single Actions to Embedding Change
EE has been increasingly focused on learning that is based on taking action, such as consumer action and volunteer conservation action. Learning for sustainability takes the action dimension a step further, helping learners develop the skills to influence change within a system, organisation or wider society. It engages the learner in identifying relationships which can embed change as opposed to single actions which may not challenge root causes. It seeks structural and institutional change focusing on individual change or using end-of-pipe approaches (see Box 1.30).

Systemic thinking underpins this approach which encourages changes to be mindful (as far as possible) of the whole system so that longer-term positive change is more likely to come about. This approach involves the study of how change happens in particular contexts and to consider people's assumptions and strategies for change. By looking at the world in a more holistic way, more systemic changes in our lives and our society can occur through a 'redesign' of many of our current systems and established ways of living along sustainability principles. Volumes 2 and 5 of this series deal in greater depth with the practice of embedding change through learning.

In addition, learning for sustainability encourages education processes which question the thinking and assumptions behind our actions rather than judge our actions. Certain problems can be encountered if particular actions

Box 1.27
Attitudes to Behaviour

'Traditional thought among educators and EE theorists illustrated a linear model for the relationship between environmental knowledge, attitudes and behaviour. In other words, it was widely acknowledged that a positive attitude towards the environment and the associated behaviour could be the result of increased environmental knowledge. However, research in environmental behaviour during the last two decades has provided evidence of a more complex relationship between behaviour and numerous variables. Many have come to question this linear relationship.'

Scoullos and Malotidi (2004, p.25)

Box 1.28
Values Clarification

Values clarification is self-reflective. It is a process which enables us to understand how our backgrounds and experiences have influenced how we think and act and why they might be different to other people's values.

Learning for sustainability promotes the use of self reflection which can create a personal relevance in, and connection to, change for sustainability. It engages people in reflecting on what sustainability means to them in their own lives. Using values clarification people can review their actions given their own values and cultural context. Once they are aware of these cultural processes, they can more effectively build their capacity as agents of change in working towards sustainability[72].

■ **Box 1.29**
Behaviour Change vs Agents of Change

Some EE programs, including social marketing initiatives, are underpinned by a behaviour modification theory. This theory aims to identify the key factors that determine the behaviours of target audiences. Its approach is strongly deterministic in nature and uses prediction and reinforcement to control the thinking and actions of individuals. EE programs underpinned by this method consider ways of making 'new' behaviour's more attractive and accessible to a target audience by focusing on the benefits and barriers to adoption. Ian Robottom and Paul Hart[75] argue that these approaches often result in 'blaming the victim' rather than addressing the root of the problem.

Bjarne Bruun Jensen and Karsten Schnack[76] explain how rather than modifying behaviour, the challenge for guiding people towards sustainable lifestyles is one of helping them discover for themselves the changes which are most meaningful for them and helping them to develop the competence to create social change.

■ **Box 1.30**
EE Community Action Programs: End-of-Pipe Approaches

'The last ten years have seen hands-on community action EE programs growing in number. The movement began in the early 1980's in Australia, with the emergence of Landcare - a Victorian government program addressing sustainable agricultural practices in rural areas. Since then, there have been a number of State and Federal Community Action Programs including 'Coastcare', 'Bushcare' and 'Waterwatch'….. Community action programs have shifted community attitudes and develop a stewardship ethic towards the environment.

Community action programs assume that a change in knowledge, attitudes and behaviour will result in positive changes in peoples actions. While these programs are enabling some positive environmental outcomes, most volunteers have not built the capacity to envision and manage change for sustainability. As a result volunteers may not be able to participate in change or decision-making concerning sustainability issues at their core…rather they accept an end-of-pipe approaches to environmental management for example through involvement of pre-determined restoration and conservation projects.'

Extract from Volume 3 of this Series (2005, p.14)

are criticised or demonised without providing an opportunity for people to question why this is the case, or without providing alternative and practical solutions. For example, some educators have seen limited value in children coming home from school to lecture their parents about the negative impacts on the environment of using their car. Parents' options may be limited due to socio-economic factors or lack of alternative options. In any case, being told what not to do is unlikely to yield sustainable change. Learning for sustainability focuses on encouraging people to think on why certain decision are being taken and what are the real alternatives available to them.

e) From Integration to Innovation.
Integration of sustainability across departments and curricula has been a key objective of EE programs and activities over the past ten years. Learning for sustainability does promote mainstreaming but it challenges the integration concept, arguing that it is transformation and innovation that lies at the heart of sustainability. Integration maintains the status quo; it does not challenge unsustainable practice. For example, it is argued that addressing sustainability in the higher education curriculum requires more than the addition of content, as it cannot be simply integrated into a curriculum that implicitly promotes unsustainability[78]. The way knowledge is disseminated within the curriculum and across departments needs to be challenged. Underpinning this new approach is the argument, reinforced by UNESCO at the Johannesburg Summit, that new mental models are needed to achieve sustainability. This involves questioning and reflecting upon actions and decisions as well as developing a deeper understanding of our social dispositions. Fundamental changes are required to the way we view and evaluate lives[79]. This requires more than integrating sustainability ideas into our work or social systems. The ideas described above and their implications for practice are explored in greater depth in Volumes 2, 3, 4 and 5 of this series.

f) From Problem-Solving to Creating Alternative Futures.
A learning for sustainability approach focuses on our ability to think and work towards a more sustainable future. Many EE programs take an environmental problem resolution focus[80]. Rather than just focusing on the existing problems, which can become overwhelming and depressing, futures thinking provides a more empowering alternative. It involves more than just focusing on problem-solving our way out of our current situation[81]. Creating sustainable futures is a process that transforms the way people relate to their future, it helps to clarify their values, provide direction and, above all, leads to action plans for change[82] (see Box 1.31). Section 1.3 of this volume explores futures thinking and envisioning in greater depth.

g) From Sending Messages to Creating Opportunities for Reflection, Negotiation and Action.
A learning for sustainability approach challenges the role of the educator and seeks to break down the traditional teacher-student hierarchy in a classroom as well as the sending out of key messages to target audiences in community EE. Learning for sustainability encourages collaborative learning environments which do not merely impart knowledge but build capacity of the learner (see Box 1.32). Negotiation, evaluation and action are essential parts of this process.

Methods used include facilitation and mentoring (see glossary) which redefine the role of the teacher and encourage learning to be driven by the learner. They challenge traditional power, politics and participation relationships associated with teaching and provide more compatible reflective learning and capacity building processes[83]. Volumes 2, 3, 4 and 5 of this series consider this shift in greater detail and highlight its implications for practice across social sectors.

The list above identifies some of the elements of a learning for sustainability approach to EE. These elements inform the various components of this approach which seeks 'new learning' and requires new sets of skills from educators and learners. The following section will define the key components and provide examples of methodologies which help to develop these ideas in practice.

Box 1.31
Futures Thinking

'…encourages us to take responsibility for actions and decisions, to think ahead and to participate in processes of social innovation, recovery and renewal.'

Slaughter (1991, p.8)

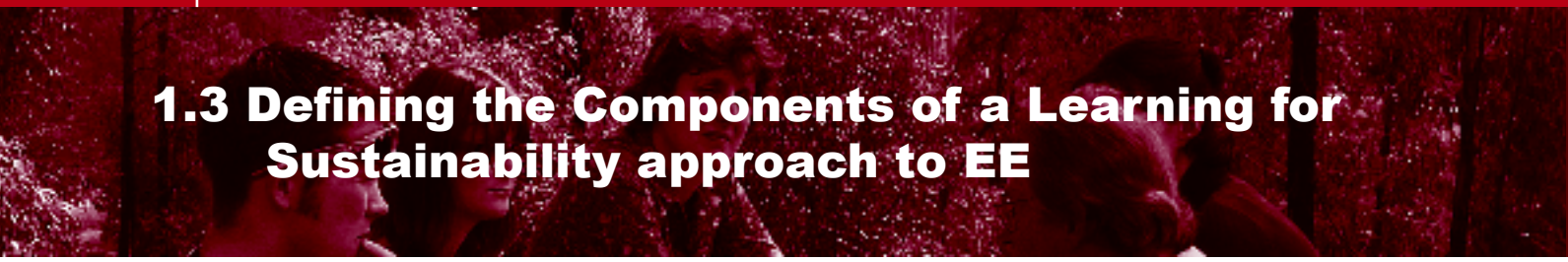
Box 1.32
New Role of the Teacher and Learner

'New Learning (rather than teaching) approaches are called for…Yet, few are trained or experienced in these new approaches. Practitioners need support to explore new ways of promoting learning.'

Hamu (2004, p.vi)

'Educators require new sets of skills such as envisioning, critical thinking and reflection, dialogue and negotiation, collaboration and building of partnerships.'

Tilbury and Wortman (2004, p.12)



1.3 Defining the Components of a Learning for Sustainability approach to EE

Learning for sustainability calls for new ways of engaging people and organisations in learning and change for sustainability. This section outlines the components of this approach to EE as well as a range of methodologies associated with each one:

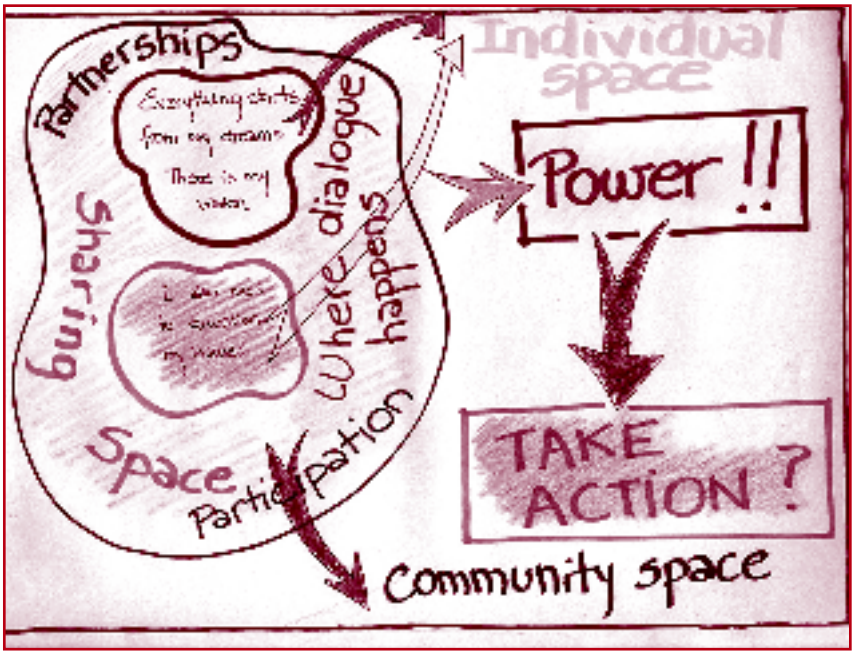
i) Envisioning a Better Future;

ii) Systemic Thinking;

iii) Critical (Reflective) Thinking;

iv) Participation in Decision-Making; and

v) Networks and Partnerships for Change.



Drawing by Daniela Melo on the components of Learning for Sustainability.

i) Envisioning a Better Future

The Johannesburg Summit[84] reminded the world community of the important choices that need to be made if we are to create a sustainable future. Many side events at the Summit helped scope the cultural territory and mark out some of the critical questions that need to be asked when making these profound choices. This step is critical to progress, but progress, however, depends on the ability to envision a better society[85] (see Box 1.33).

The rationale

The exercise of *imagining a better future*, sometimes also referred to as 'futures thinking' or 'envisioning', is a pivotal component of education and learning for sustainability (see Box 1.34). Essentially, it is a process which is transforming the way people relate to their future and therefore the way they act today.

Experience in EE has shown that 'doom and gloom' scenarios do not motivate people to change[86]. Instead what is needed is the development of a belief that there is an alternative to our current situation and an understanding of how the process of change happens.

All too often people feel disempowered by the negative images and doomsday projections for the future[87]. Today's media is dominated by stories of poverty, environmental degradation, species extinction, corruption and terrorism. While such issues require urgent attention, basic knowledge about them does not lead us to a clear path of action, nor does it motivate participation in their solution. Rather, such all encompassing negativity often leads to feelings of powerlessness, apathy, guilt and disillusionment, clouding the path towards real solutions.

Many current educational practices are focused on trying to problem-solve their way out of unsustainable development rather than on creating alternative futures[88]. In addition, some traditional EE programs and resources have offered a particular view of the future, which are not questioned in any way or do not encourage people to engage in change.

Educators have been exploring futures thinking and 'envisioning' tools as a way of helping people, schools, communities and organisations to see 'sustainability' not as a vague concept but something that is directly relevant to their lives. Key questions related to this process include:

- What assumptions underpin a vision?
- What has influenced or informed a person's vision?
- How and why might others not agree with this vision?
- What are the implications of this vision for life, work and everyday choices and actions?

Building a vision is about imagining a better future. It is a process that engages people in conceiving and capturing a vision of their ideal future (see Box 1.35). Envisioning helps people to discover their possible or preferred future and to uncover beliefs and assumptions that underlie their visions and choices. It is an opportunity for people to explore a

Box 1.33
Envisioning

'We cannot build a future we cannot imagine. A first requirement, then, is to create for ourselves a realistic, compelling and engaging vision of the future that can be simply told.'

Elgin (1991, p.6)

Box 1.34
Futures Thinking in Learning for Sustainability

Futures thinking and envisioning have featured repeatedly in the learning for sustainability literature. It has been a key component of the UNESCO discourse:

- 'Education for sustainable development has come to be seen as a process of learning how to make decisions that consider the long-term future of the economy, ecology and social well-being of all communities. Building the capacity for such futures-oriented thinking is a key task of education.'

  UNESCO (2002, p.10)

- '…people of all ages can become empowered to develop and evaluate alternative visions of a sustainable future and to fulfil these visions through working creatively with others.'

  UNESCO (2003a, p.4)

Box 1.35
Futures thinking is...

'Futures thinking is a way of thinking, both structured and unstructured, about the longer term futures that may eventuate. This is done in ways that should prove useful for society or organisations to consider the effects of what they are doing now and planning to do for the future.'

Gunston (2004 p.4)

Focus On:

Personal Journeys and Reflections on Envisioning

Positive and Compelling

'Facts, figures, proof, forward projections: they can all be brought together to show that our planet is heading for disaster…… Doom scenarios make us despair, or panic. We give up thinking that it is too hard to deal with….

Envisioning is positive. We envision the change that we want. What does it look like? The vision becomes compelling – something we really want to bring about. A compelling vision triggers thoughts about what would need to be in place for that vision to be real. Dialogue is possible… We can start to think about how to build this vision.'

Excerpts from a personal journal reflecting on education for sustainability by Helen Sloan (2003).

The Power of Envisioning

'Of everything I heard in class, futures thinking was of immediate appeal due to its power to inspire, motivate and empower….Since when have people felt truly empowered to change their lives?

Futures thinking is a means to engage individuals in the debate surrounding education for sustainability. By asking them to envision, they immediately become actively involved in imagining a sustainable future. It empowers them to realise the stake they hold in the future with a positive framework that motivates them towards taking action on those visions….

People do need a direction – they need a vision they can aim for. I know from my own understanding that you can't have a personal goal without starting with a dream.'

Excerpts from a personal reflective journal on education for sustainability by Amanda Keogh (2003)

Reaching an Understanding

'Beyond what we consider the traditional concept of sustainability lie a myriad of realities. In order to reach an understanding we must engage in new ways of seeing our world. Envisioning is the key to this process.

When sharing our vision we achieve an understanding of the differences and similarities of other visions. By engaging in a visioning process we form a conceptual basis from which to negotiate and define a future outcome.'

Excerpts from a personal journal reflecting on education for sustainability by Kalina Koloff (2004).

Identifying Potential Alternatives

'In order to get people on the bus for the good reasons, it needs to be relevant to them. This is the same for organisations and institutions. It is answering to the question they are all asking:…"What is in it for me?"

Envisioning can help people to identify what is really important to them, what they would like as a future not considering today's situation but their profound dreams. This allows people to clarify their values too. It forces people to critically question what they want for a sustainable future.

Starting from that desired future, it is then easier to identify today's real issues, the priority issues that would go against accomplishing the desired objective. Futures envisioning is also about identifying different potential alternatives that are preferred. It therefore provides guidelines for modifying our actions in order to move towards the chosen option.

The process of necessary change becomes more visible and can be broken down into steps. Envisioning is about creating compelling future visions that can be a cooperative venture producing powerful goals or images leading to action.'

Excerpts from a personal reflective journal on education for sustainability by Anouk Studer (2004)

better world, to engage in dialogue with others and to take action in mapping a pathway to sustainability. Every individual's vision can have direct or indirect implications for future action and naturally provokes further questions. Envisioning is a powerful futures education tool which can help drive changes towards a better world.

David Hicks and Catherine Holden[89] argue that not only do people need to explore the origins and consequences of current unsustainable practices but that they must also 'establish the need for, and nature of, a more sustainable society'. Educating *about* and *for* the future, they believe, is critical to learning for sustainable development. Using approaches such as futures scenario planning motivates and empowers people to make changes as they begin to appreciate the relevance and importance of this ill-defined concept (see Box 1.36).

In practice

Uncovering and understanding values are essential steps in the process of learning for sustainability. People need to not only articulate what their vision for a sustainable future looks like but also to critically reflect on, and articulate why, it is important to them, what has informed their vision and what values make up their vision. Envisioning provides the opportunity for both participants and practitioners to explore relationships between their desired future and their personal values. Uncovering values also begins a journey during which people explore the links between their assumptions, their biases, their culture and family and subsequent decision-making and action. This process is often referred to as values-clarification. Participants begin to engage in and reflect on critical questions:

- What do I value and why?
- What do other people value and why?
- What has informed and influenced my values?
- Is my vision negotiable?
- What information, steps, skills and knowledge are needed to proceed towards this vision?
- Who needs to be involved in reaching this vision?
- Who is making the decisions?

In summary

Envisioning is not a stand alone event. Rather it marks the beginning of a journey in learning for sustainability in which people begin to feel engaged, empowered and responsible to act in ways to reach their vision. As a core component of learning for sustainability, visioning needs to be addressed in the design and planning of programs. It needs to be linked to an exploration of the process of change and an understanding of how change occurs. This includes revisiting and requestioning the vision at regular intervals to ensure it is fresh and relevant. Such a process moves from being an individual enquiry through negotiation and collaboration to a shared vision. Through this process, learning for sustainability empowers people with the ability to participate in achieving their vision for the future[90].

Box 1.36
No Clear Vision for Sustainability

'One of the most consistent traits that appear in high-performance organisations is broad-based clarity on what they are striving to achieve...

B&G Power Tools failed to establish clarity about what it wanted its environmental programmes to achieve. It also failed to adopt first-order principles to guide decision-making...B&G's managers failed to understand that sustainability requires a fundamentally different business model, not just better controls over or incremental improvements to their straight-line take-make-waste production processes. The absence of a clear vision of sustainability led employees to assume that being in compliance with existing laws and regulations was the sole purpose of the company's environmental programmes. Compliance is a negative, backward looking vision. It focuses on what not to do. Avoiding problems by following governments regulations is profoundly different from achieving sustainable development…

A lack of clear vision is a problem not limited to private companies …most governments choose negative, backward looking visions focused on 'minimising' harm to the environmental and social welfare through compliance within minimum standards. Few governments have adopted positive forward looking visions or guiding principles that can help their institutions, or society at large, begin to restructure their production modes or organisational designs and transition towards sustainability.'

Doppelt (2003b, p.34)

Focus On:

Vision, Sustainability and Business

'What exactly is sustainability? Once you define (it) how do you effectively pursue this new strategy? How do you transform your organisation from top to bottom so that your vision of sustainability drives everyday decision-making and defines short and long term successes?

Vision and leadership are key to this process.…Once you have a vision you are able to create a framework for effective and principled decision-making…An entire company's culture can be transformed when its decision-making framework becomes infused with a strong sense of purpose.

…..vision provides the goal: principles frame the path. Attaining this clear vision, however, is not easily achieved. Since the early 1990s many businesses trying to operate more sustainably have defined themselves with strategies aimed at reducing the impacts of industry by minimising waste, pollution and natural resource depletion. While we applaud these efforts which can ease ecological stress in the short term, minimising environmental degradation is not a strategy for real change, nor does it offer an inspiring vision of success.

….Real change comes when industrial processes are designed to be more economically, socially and ecological beneficial rather than merely less polluting. Long term prosperity depends not on making a fundamentally destructive system more efficient but on transforming the system so that all its products and processes are safe healthy and regenerative.

Statements such as 'we will be in full compliance with the law' and 'we will minimise our environmental and social impacts' are not visions. They tell people what not to do – what to avoid. These are backward looking images. They focus on eliminating something. Negative purposes fail to elicit the creative energies or passions of employees. This approach depresses human motivation and underscores the truth of the old biblical proverb that says: 'where there is no vision, the people perish'. Effective visions, in contrast, provide an absorbing, positive image of the future'

Providing a positive image of the future that can empower and inspire creativity and commitment is a first step towards sustainability.

Extracts from the foreword by William McDonough in Doppelt (2003b, p.7-8)

Envisioning[91]:

- Provides a reflective space for people to engage in a ***meaningful interpretation*** of sustainability.
- Assists in identifying ***relevance*** between sustainability and people's own lives and sociocultural context.
- Offers ***direction and energy***, provides impetus for action by harnessing deep aspirations to motivate what people choose to do in the present.
- Creates the ability to identify and ***critically question*** what participants want for a sustainable future.
- Uncovers and deconstructs ***what we value and why we value them***, as well as what other people value.
- Provides an opportunity to consider ***conflicts, contradictions and similarities*** with other people's visions in a non-threatening learning space conducive for discussion.
- Helps to see the process of ***change as a series of steps*** and helps them to reflect on factors/choices that bring about different types of change. This action paves the way forward for collaborative solutions and actions.
- Helps us to explore alternatives and consider preferred futures – providing a strong sense of the future and ***meaningful orientation to our actions.***
- Emphasises that people are the ***owners of their vision, process and outcomes.***
- Enables people to ***look at situations, problems and obstacles*** and to consider better ways of observing them. It can help people to not only highlight their dreams of 'where to next' but also how their actions today contribute to or detract from their vision. This realisation is vital in helping people to take ownership of and responsibility for working towards a better future.
- Leads to an exploration of how to ***achieve change*** for a more sustainable future. Encouraging learning about the process of change and how it occurs.

Box 1.37
Key Texts and Resources on Futures Thinking

- Burchsted,S. and Byrne, J. (2001) *Shaping Our Future: Facilitators Guidebook*. Vermont, USA: Foundation for Our Future and Center for a Sustainable Future. Available at http://www.ffof.org
- Dator, J. (1993) 'From future workshops to envisioning alternative futures' *Futures Research Quarterly*, 9: p. 108-112.
- Hicks,D. and Holden, C. (1995) *Visions of the Future: Why we need to teach for tomorrow*. Staffordshire, England: Trentham Books.
- Raskin, P., Banuri, T., Gallopin, G., Gutman, P., Hammond, A., Kates, R., and Swart, R. (2002) *Great Transition: The Promise and Lure of the Times Ahead*. A report of the Global Scenario Group. SEI PoleStar Series Report no. 10. Boston: Stockholm Environment Institute.
- Slaughter, S. (1991) *Futures Concepts and Powerful Ideas*. Melbourne: Futures Study Centre.
- Tilbury, D. and Wortman, D. (2004) 'Imaging a Better Future' Chapter 2, *Engaging People in Sustainability*. Gland, Switzerland and Cambridge, UK: IUCN Commission on Education and Communication.
- Wheeler, K.A. and Bijur, A.P. (eds) (2000) *Education for a Sustainable Future: A Paradigm of Hope for the 21st Century*. New York, USA: Klumer Academis/ Plenum Publishers.
- Zeigler, W. (1987) *Designing and Facilitating Projects and Workshops in Futures Invention*. Boulder, USA: Futures-Invention Associates.

ii) Systemic Thinking

Box 1.38
Ancient Wisdom

'You think that because you understand 'one' you must understand 'two' because one and one make two but you must also understand 'and'.'

Ancient Sufi Saying as cited in Sterling (2004, p.79)

Box 1.39
A New Way of Perceiving?

'Closely related to holistic and ecological thinking, systemic thinking is a way of perceiving, and a set of principles, tools and techniques that is helping lead to more genuine solutions for sustainability – solutions that address core problems and lead to sustained change. Essentially, systemic approaches help us shift our focus and attention from 'things' to processes, from static states to dynamics and from 'parts' to 'wholes'.

For many years, scientists, educators and policy makers have followed a fragmentary approach to knowledge – reflecting the roots of modern Western thinking in 300-plus years of an essentially reductionist and linear outlook which is deeply embedded in our culture. This is evidenced in separate disciplines, separate professions, separate government departments and overspecialisation. Similarly, our approaches to problems tend to be simple and mechanistic, evidenced in such phrases as 'problem-solution', 'either-or' and 'cause and effect.'

Sterling (2004, p.81)

The early EE literature consistently referred to the need for people to think holistically and explore the interrelationships and patterns within our natural and social systems[92]. This concept has since evolved into systemic thinking – a key theme of learning for sustainability approaches to EE.

Systemic thinking helps us to see the world differently as well as to address the root causes of problems (see Box 1.38). It provides us with, what Stephen Sterling has described as, a way to challenge the 'thinking legacy' which pervades our education, government and community systems, and which has led to unsustainability[93].

The rationale

Traditionally we come to understand things by taking them apart, deconstructing and breaking down components into smaller parts. Stephen Sterling argues that in a complex and ever changing world there is a strong argument that analytic thinking is not enough and that it might indeed be increasing our problems[94] (see Box 1.39). Systemic thinking offers a better way to understand and manage situations marked by complexity. It can replace the old ways of thinking, challenging fragmented thought with its emphasis on integrated and adaptive management[95].

Systemic thinking challenges the current tendency to segregate thought. It encourages us to see connections between things and how 'this' relates to 'that' or recognise that there might be implications to our actions which were not foreseen[96]. Increasingly evident are the 'externalities' or hidden costs of our actions. Current thinking either does not consciously register or link these components of the system to our actions or it does not perceive it as relevant. Systemic thinking helps us engage in change in a way that does not contradict our intentions. It seeks complementary actions and encourages thinking and planning that does not result in conflicting impacts. Above all, it recognises the complexity and interrelatedness of social, natural and economic systems and seeks integrative responses[97].

'Joined-up thinking', 'intergrative thinking', 'relational thinking' and 'holism' are words often used to describe systemic thinking. As the 'Focus on: The Blind Men and the Elephant' on page 29 indicates we are sometimes blinded by our current ways of thinking which often do not recognise the importance of connections and of linking thinking.

Dominant models of thinking often blind us to the complete picture and create false divisions and segregated patterns of thought. It is common to find people seeking singular solutions to what are perceived as singular problems. Stephen Sterling argues that this often leads us to only address the symptoms of problems, rather than their underlying causes[99]. Often these symptomatic solutions can also lead to further unexpected problems.

Alternatively systemic thinkers will seek to understand the complete

Focus On:

The Blind Men and the Elephant

It was six men of Hindustan,
to learning much inclined,
Who went to see an elephant,
though all of them were blind,
That each by observation
might satisfy his mind.

The first approached the elephant,
and happening to fall
Against his broad and sturdy side,
at once began to bawl,
"Why, bless me! But the elephant
is very like a wall."

The second, feeling of the tusk,
cried, "Ho, what have we here,
So very round and smooth and sharp?
To me 'tis mighty clear,
This wonder of an elephant
is very like a spear."

The third approached the elephant,
and happening to take
The squirming trunk within his hands,
thus boldly up and spoke,
"I see," quoth he,
"the elephant is very like a snake."

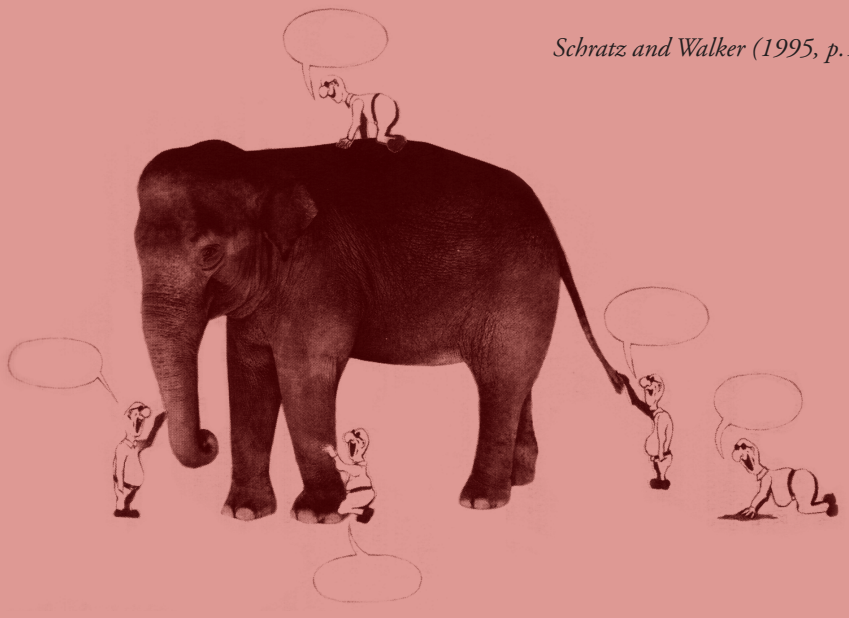
The fourth reached out an eager hand,
and felt about its knee,
"What this most wondrous beast
is like is mighty plain" said he,
"Tis clear enough the elephant
is very like a tree."

The fifth who chanced to touch the ear
said, "E"en the blindest man
Can tell what this resembles most;
deny the fact who can;
This marvel of an elephant
is very like a fan!

The sixth no sooner had begun
about the beast to grope,
Than seizing on the swinging tail
that fell within his scope;
"I see," quoth he, "the elephant
is very like a rope."

So these men of Hindustan
disputed loud and long,
Each in his own opinion
exceeding stiff and strong;
Though each was partly in the right,
they all of them were wrong!

Schratz and Walker (1995, p.19-21)



Box 1.40 The Shifts Required for Sustainability

The implications of Fritjof Capra's[98] thinking for those engaged in education include:

- Thinking systemically requires several shifts in perception, which in turn lead to different ways of teaching, and different ways to organise society.
- Systems are integrated wholes whose properties cannot be reduced to those of smaller parts.
- The 'objects' of study become the networks of relationships within a community.
- A shift from analytical thinking to contextual thinking. This allows a focus on project-based rather than subject based learning and encourages educators to be facilitators rather than 'experts' dispensing knowledge.
- Focus on the learners developing an understanding of the processes of change and transformation, rather than on the learner obtaining the 'right' answer.
- Focus on the patterns within systems or communities rather than on the individual constituents.

Box 1.41 Linking Education with Sustainability

'This is an important opportunity to leave our short-term ways of thinking behind, but starting from now. The world is changing fast around us. It is becoming more uncertain and more complex. Learning for sustainability is also an agenda that we need to start tackling now. We have an important opportunity to link two of the central policy agendas of the government: education and sustainable development.'

Foreword by Sarah Parkin and Ursula Howard in Sustainable Development Education Panel (2003, p.ii)

picture. They look for relationships and connections. They recognise that systems are interactive and interdependent and that working collaboratively with others to address, rather than control, issues is critical. Co-operation assists in identifying how actions and potential solutions impact on other aspects of a system, which may not be evident to a small group of people[100].

Fritjof Capra's work[101] has over the past two decades challenged environmentalists to think more about systems when attempting to understand and respond to environmental issues. His work has been influential in the shift from environmentalism to sustainable development (see Box 1.40) and has laid the grounds for systemic thinking. It has led others such as David Pepper[102] to explore the roots of modern Western thinking in order to understand the reductionist and linear approach which is engrained within current thinking and that has influenced some environmentalism over the past 30 years. These thinkers challenge the simple mechanistic approaches to change. Their arguments underpin systemic thinking and have implications not only for policy agendas (see Box 1.41) but also for how we approach and manage EE programs and activities.

In practice

There is evidence that a few community groups and local government agencies are recognising the need to build the skills to think more integratively. A handful of education initiatives now include systemic planning and thinking exercises to bring about change in informal settings[103], although this is not common practice (see Box 1.42).

Fewer efforts exist which make use of systemic thinking as a way to bring about change within an organisation or institution towards sustainability. Bob Doppelt's recent work supports this[104]. He argues that employees at all levels of the organisation must think systemically and be meaningfully engaged in system-wide planning and decision-making, rather than being managed as separate parts. Through analysing case studies of organisations engaged in sustainability, his research indicates that the shift to sustainability requires organisations be understood and administered as integrated whole systems[105].

Bob Doppelt identifies 'Seven Sustainability Blunders' which explain why private and public organisations have failed to contribute to sustainability. Many businesses and government organisations divide themselves so that different functions, such as environmental and labour relations, are assigned to separate units. Bob Doppelt argues that this results in executives perceiving sustainability as yet another project and prevents them from understanding how it challenges design, purchasing, production and all other functions. No single unit, he argues, can identify all of the ways in which processes or products affect the environment or social welfare and so the systems which contribute to unsustainability remain unchanged (see Box 1.43).

Systemic thinking also offers new way to looking at EE within formal education. Volume 2 of this series, documents how it is essentially about moving from a fragmentary and reductionist view of the world and of knowledge which underpins our curriculum and school management practices. It offers specific examples of good practice but highlights that although the EE and learning for sustainability literature on formal education refers

to 'interconnectedness', 'holism' and 'cross-curricularity'[106], there has been a lack of engagement with systems thinking and related tools.

Recently, SustainUs, a change management group, asked the question: 'Joined-up thinking – can it really be done?' 'What makes a sustainability practitioner effective when faced with this challenge of linked-up thinking?'[107]. The group recognised that that there is plenty of professional peer pressure to be 'joined-up' and deal with holistic thinking, cross-boundary engagement within organisations working towards sustainability. They see a need to build the capacity of those whose job it is to drive sustainability in their organisation but point to how many workshops and training opportunities that are focused on the practical project management and monitoring aspects but not on the developing agents of change in this area. It concluded that if organisations are serious about training its employees for accelerating sustainability, they must assist them in the development of personal skills which help them think more integrally and collaboratively.

In summary

The reality is that, systemic thinking is a relatively new concept in education and only a few tools are available to help prepare people to engage with this new way of thinking (see Box 1.44). The WWF Scotland project on 'Linking Thinking' provides some useful resources; however, there is a need to investigate in more detail the training and development needs of sustainability professionals in this area.

Box 1.42
Seeing the Bigger Picture

During a House of Commons Inquiry into learning for sustainability in the UK, Glen Strachen commented that initiatives are struggling to implement systemic thinking in practice:

'People are encouraged to recycle but how often are they informed about the whole loop? They might be told that they are preventing things from going to landfill but what about the energy they are saving in glass production if they recycle their bottles and jars and what is the knock on effect with climate change for that?'

Glen Strachan as cited in House of Commons, Environmental Audit Committee (2005, p.11)

Box 1.43
Corporate Blunders: 'Siloed Approach to environmental and socio-economic issues'

'Because their primary frame of reference is the linear take-make-waste economic model, traditional management-training programmes promote a mechanistic approach that views organisations as collections of separate parts that can each be managed independently. Thus, the design and purchasing departments operate more or less independently from the manufacturing, waste management and other divisions. Similarly, the environmental health and safety department handles regulatory compliance, employee health and worker safety issues. In many organisations, sustainability is handled by a separate unit.… no single unit can see how the whole system functions and because those who know the organisation's operations best – its employees and shareholders – are not meaningfully engaged in finding systemwide solutions.

Norm Thompson Outfitters, in contrast, understood that each unit of the company as well as key stakeholders influenced the way others performed their work. Every unit, therefore, needed to be involved if the company was to become more sustainable. To achieve this, the environment had to become a 'screen' through which all employees view their daily decisions and actions, not a separate programme. A team composed of people from every organisational unit and function helped to develop and implement the company's sustainability action plan. Norm Thompson also realised that success could not be achieved if it isolated itself from external stakeholders. Buyers, environmental non-profit groups and others were therefore also involved.. As a result achieving sustainability is a company-wide and value chain-wide task'

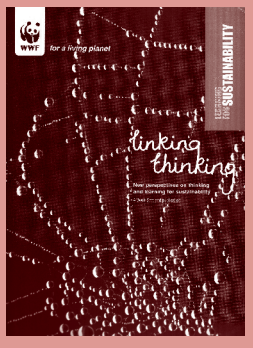
Doppelt (2003b, p.32)

Systemic Thinking[108]:

- Looks at the ***whole larger context*** – resisting our tendency to simplify problems and solutions.
- Sees the larger properties of ***whole systems*** that emerge from the interaction of individual parts.
- Helps us to look at ***multiple influences and relationships*** when we explore and participate in resolving issues.
- Expands our worldview and helps us to become ***more aware of the boundaries*** and assumptions we use to define issues.
- Recognises the ***influences of our worldviews*** and self perception.
- Helps us ***appreciate other's viewpoints***.
- Helps to ***restore a sense of connection to place***, to others and the wider world.
- Recognises the various ***ways of learning and knowing***.
- Helps us accept uncertainty and ambiguity and to ***participate and learn from change***.
- ***Identifies strategies*** that generate better sustainable solutions.
- Integrates decision-making and ***adaptive management*** techniques and encourages more ***participatory and interdisciplinary*** approaches.

Box 1.44
Key Texts and Resources on Systemic Thinking

- Sterling, S. (2004) 'Systemic Thinking' Chapter 6, In Tilbury, D. and Wortman, D. (2004) *Engaging People in Sustainability.* Gland, Switzerland and Cambridge, UK: IUCN Commission on Education and Communication.
- Sterling, S.(2004) *Linking Thinking: Unit 1 - Education and learning, an introduction.* Perthshire, Scotland: WWF-Scotland.
- Sterling, S.(2004) *Linking Thinking: Unit 2- Developing LinkingThinking perspectives and skills in problemsolving.* Perthshire, Scotland: WWF-Scotland.
- Sterling, S.(2004) *Linking Thinking: Unit 3, Exploring Sustainable Development through LinkingThinking perspectives.* Perthshire, Scotland: WWF-Scotland.
- WWF Scotland (2004) *Linking Thinking Toolbox.* Perthshire, Scotland: WWF-Scotland.
- Capra, F (1996) *The Web of Life*. London: Harper and Collins.
- Huckle, J. and Sterling, S. (1996) *Education For Sustainability.* London: Earth Scan Publication.
- Doppelt, B (2003) *Leading Change Towards Sustainability: A Change Management Guide for Business, Government and Civil Society*. Sheffield, England: Greenleaf Publishing Ltd.
- Bell, S and Morse, S (2003) *Measuring Sustainability – Learning from Doing,* London, Earthscan Publications.



iii) Critical (Reflective) Thinking

Critical thinking is an essential part of learning for sustainability approaches as it challenges the way people interpret the world and how knowledge and opinions are shaped by personal experiences and social influences (see Box 1.45). Critical thinking is usually triggered by a questioning process. This questioning might take place through dialogue in a workshop, during a meeting, through role-playing exercises or through constructing visual maps. All these methods share the common objective of helping challenge assumed knowledge and question current thinking.

Throughout the course of a day, people constantly absorb information by reading newspapers, listening to radio, watching television and browsing the internet. They frequently interact through conversations with family, friends, social groups, work colleagues or school peers. They are targeted by companies seeking to sell products or services. All of these sources influence how people perceive the world and what is considered to be of value in everyday living.

Moreover, these sources present a particular viewpoint, or have bias. Media interests shape the news. Corporations influence government regulation. National interests and priorities reflect cultural perspectives. Through advertising, companies encourage people to consume by linking their products to feelings of self-worth, status or to social, cultural and environmental issues.

Friends, family and co-workers also influence as they can lead to 'group thinking' where many simply adopt the opinions and views of those around them – sometimes subconsciously. Critical reflective thinking empowers the individual to identify these influences in their thoughts and actions and to clarify for themselves whether they are making the appropriate choices.

The rationale

Critical thinking allows us to recognise that even the most rigorous scientific studies are influenced by the perception and assumptions of the researcher. Amongst others, John Huckle's work over the past three decades has laid the foundations for the critical (reflective) thinking component in learning for sustainability. His argument is that the world cannot be changed rationally unless it is interpreted adequately. 'Critical' thinking involves personal reflection on the appropriateness of mental models that have traditionally guided thinking and action. By understanding the presence of bias and assumptions in structures, ideologies and processes in the world, people can be empowered to think and act in more rational and autonomous ways.

Uncovering the layers of assumptions that inform our thinking and actions, much like peeling back the layers of an onion, is an essential step in learning for sustainability and a key component of learning for change towards sustainability. Critical thinking allows us to reconstruct a deeper understanding of how new political, economic and social structures better lead us to sustainability.

Box 1.45
Critical Thinking in Learning for Sustainability

Critical Thinking has been featured repeatedly in the learning for sustainability literature. It has been a key component of the UNESCO, IUCN and OECD discourse:

'Education for sustainable development must explore the economic, political and social implications of sustainability by encouraging learners to *reflect critically* on their own areas of the world, to identify non-viable elements in their own lives and to explore the tensions among conflicting aims.'

UNESCO (2002, p.12)

'...This process of critical thinking and enquiry, encourages people to explore the complexity and implications of sustainability as well as the economic, political, social, cultural, technological and environmental forces that foster or impede sustainable development.'

IUCN CEC (2003)

Box 1.46
Critical Thinking for Organisational Change: Confusion over Cause and Effect

Doppelt identifies 'Seven Sustainability Blunders' which mean that organisations fail to contribute to sustainability. He describes Blunder No.4 as 'Confusion over Cause and Effect'. Critical reflective thinking provides the processes and skills necessary to overcome this problem:

'The prevailing mental models held by most executives lead them to focus on the symptoms not the true sources of sustainability challenges. Organisations spend millions to mitigate emissions and discharges never recognising that these are results, not the causes of their problems. Emissions and discharges stem from the ways processes and products are designed and the kinds of toxic materials, chemicals and energy used to make them. Pollution controls temporarily mask these problems and keep organisations focused on managing effects rather than on designing out root causes.'

Doppelt (2003b, p.3)

Critical thinking involves asking deeper questions about the world and answering them in ways that reveal how social, political and economic structures and processes might be changed to move towards sustainability. Through critical thinking, individuals and groups can begin to deconstruct socialised views of the world, review assumptions and biases and comprehend that others see the world in similarly complex ways. This process helps to plan and take more effective and appropriate action towards sustainability.

Along with a process called values clarification, critical thinking helps us uncover how our culture shapes personal values and beliefs so that both the personal and cultural dimensions of the many complex problems of sustainability can be better understood. It engages individuals and groups in recognising postions of self-interest and in reflecting on the assumptions that underlie knowledge and perspectives[109]. Critical thinking also helps question and explore power relationships in communities, schools, workplaces and the wider world. It helps individuals and groups to question the motivations behind the hierarchies and leadership, and to understand the decisions that affect people's lives:

- Who makes such decisions?
- Why are they made? According to what criteria?
- Whose interests do they serve?
- What are the long-term consequences of the decisions?

By asking these questions, participants can better understand how others operate and can begin to break down relationships that provide barriers and build new partnerships for sustainability.

People sometimes mistake critical thinking with simply being 'a critic' of something[110]. However, 'critical' reflective thinking, as understood in the learning for sustainability context, is a more profound process which involves a deep examination of thinking and the root causes of our sustainability challenges. It also engages individuals and groups in recognising positions of self-interest and in reflecting on the assumptions that underlie knowledge and perspectives[111].

In practice

Critical thinking is confronting for many people. It requires that they ask themselves profound and sometimes complex questions about the world which attack conventional notions and assumptions along with deeply rooted personal values. Such a challenging process requires an adequate period of time for this questioning and reflection in order to arrive at a deeper knowledge about the world. The challenge for educators is to support this process.

In practice, critical thinking is vital for building individual and group capacity for learning and change towards sustainability. It is equally relevant to learning based strategies for change. Bob Doppelt makes a strong case for critical thinking when seeking change towards sustainability in an organisation. He argues that many businesses and agencies confuse cause and effect and are thus unable to see clearly what the issues are and how to resolve them (see Box 1.46). Critical thinking helps address this.

There are a few examples of how to train those in facilitating change towards sustainability in the skill of critical reflective thinking. The Sustainability Education Centre, a US-based NGO, is using critical thinking and reflection to shape the ways that youth conceptualise business

Personal Journeys and Reflections on Critical Thinking

Focus On:

Critically Questioning Our Worlds

'One issue that really became clear to me throughout this process is how rarely we (as individuals) are encouraged to critically question – whether it is information in the media, whether it is our choices in consumerism, whether what it is we are taught at school. Engaging in a process of learning about sustainability has demonstrated to me that critical thinking is an essential and fundamental component to take us beyond environmental education.'

Excerpts from a personal journal reflecting on education for sustainability by Brooke Hutchinson (2003).

The Challenges of Thought

'My capacity to think critically is so rusty! I know so little…. I can get quite frustrated with the process of critical thinking… If I am going to question everything…. how can I ever achieve a constructive conclusion?... I feel like the ground is shifting under all my preconceptions.. Critical thinking is a skill that needs to be developed in all if sustainability is to become reality…. Critical thinking encourages us to question decisions and statements that come from the 'top'… We must learn to detect bias, to challenge thinking, to recognise when we are being manipulated, to understand the motivation of those who would control our thinking… I have never thought like this in my life! Never questioned enough… I am amazed at how many thoughts and feelings are developing…'

Excerpts from a reflective journal on Education for Sustainability Amanda Keogh (2003).

Beyond the Initial Questions

'Critical Thinking is not only the process of questioning, that is its first initiative, to complete [the] process we need to answer those questions, evaluate those answers, compare them, analyse them and reflect upon them.'

'When you avoid taking information as it comes, you start your own process of empowerment and autonomy, you start wearing the new pair of glasses and your vision changes, in fact it is now your vision.

Excerpts from the Personal Reflective Journal of Camilo Orjuela (2004) in Education for Sustainable Development.

Getting to the Root of Things

'Critical thinking stimulates people to think deeply about why they hold certain values and attitudes. It can lead them to discover the root causes of a problem and stimulate effective change. It can logically challenge bias and irrational thinking.'

Excerpt from the Personal Reflective Journal of Helen Curry (2004) in Education for Sustainable Development.

Box 1.47
Critical Thinking in the Business Studies Curriculum

Dr Delyse Springlett and Dr Kate Kearins have incorporated critical thinking into their teaching of postgraduate students in management. The key to their teaching is their use of action methods to encourage critical thinking, values clarification and reflexivity.

One successful tool used throughout the course is the 'continuum'. This involves the students assessing their own current levels of awareness of issues of sustainability by taking a position on a line in the room which symbolises a wide range of perspectives. This is then discussed with fellow students. Students set their own goals for learning and increasing awareness over the year, and then reassess the goals several times during the course.

At the end of some courses, students also construct and discuss 'mind-maps' to reflect on their own learning and to evaluate the course. The critical framing of the course content encourages students to push internal contradictions and gaps in thought systems so that they can begin to see where possibilities for change might lie and where one might take action. Reflections on their personal journeys are recorded with flow charts, diagrams and pictures. The action methods employed encourage their confidence to express changing ideas.

At a time when sustainable development calls for radical change, the courses are helping students to see the potential of critical thinking in changing the lens through which they have traditionally viewed business, its responsibilities and its ways of operating. Students are helped to understand their roles and choices as potential agents of change for business and society.

Kearins and Springett (2003)[114]

Box 1.48
Global Environmental Education Programme

The Global Environmental Education Programme is a resource for schools developed by WWF UK and influenced by the work of John Huckle. The resource pack investigates environmental issues and sustainability thinking and aims to develop students' critical questioning skills and reflective thoughts. It includes modules on: 'Society and Nature', 'What we Consume' and 'Environment and Democracy'. It intends to challenge current cultural lenses and engage students actively in change for sustainability.

and entrepreneurship. 'Business and Entrepreneurship Education for the 21st Century', a full-year course developed for the New York City Department of Education, builds students' skills for business ventures that are in harmony with prosperity and the long-term health of their society and the planet[112]. The course integrates multiple rounds of critical thinking about the role of business in the world, and the relationships in business between ethics, personal values and beliefs. Students are prompted with critical questions asked within the context of society and the planet so that they can reflect on how business ventures interact with larger social issues and the environment:

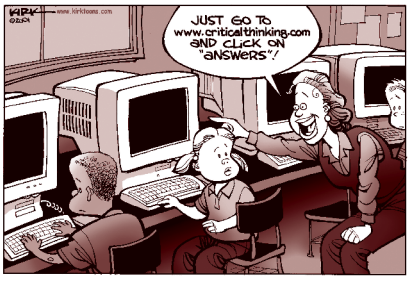
- What are my values and beliefs?
- What problems need to be addressed in the world?
- What is the relationship between business activity, a healthy society and a healthy ecosystem?

The course engages students in critical reflective thinking, envisioning and planning in a way that reflects their values and goals. As an outcome of the course, students learn how to develop a business plan, guided from envisioning all the way through to reflecting on the completed plan.

'Education about and for Sustainability in Australian Business Schools'[113] and 'Critical Thinking in the Business Studies Curriculum' (see Box 1.47) can also be cited as programs which have incorporated this component of learning for sustainability within Executive Education programs.

Volume 2 of this series explores the practice of critical reflective thinking within the Australian formal education system. It acknowledges the influence of a global consumer culture and the mark made by multi-national companies such as McDonalds and Nike which not only offer an 'experience' but also an identity. The increasing role of the internet in shaping students learning is also recognised (see Figure 1.3). This new social culture has significant implications for how we practice EE in our schools. Volume 2 documents examples of critical reflective questioning processes and tools, such as 'The Global Environmental Education Programme' (see Box 1.48), which encourages students to question the realities, inequalities and assumptions which lead to unsustainable development.

Figure 1.3
The dominant paradigm of education today...



Cartoon by Kirk Anderson

In summary

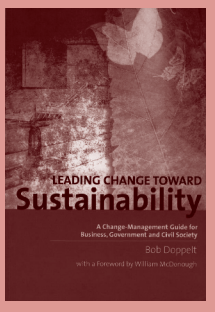
Ultimately, sustainability depends on fundamental changes in lifestyles and the choices people make day-to-day. These changes have to be motivated by a clarification of, and shifts in, values so that the change can be rooted in the cultural and moral foundations upon which thinking and action is based. Critical reflective thinking offers people the opportunity to challenge current cultural viewpoints and empowers them to make their own decisions as to how to engage with sustainability.

Critical (Reflective) Thinking[115]:

- Challenges us to ***critically question assumptions*** and ***recognise bias*** and power behind institutions, governments, media, companies and people around us.
- ***Deconstructs our socialised views*** of the world to comprehend that others around us see the world in similarly complex ways.
- Allows us to ***reconstruct a deeper understanding*** of how ***different political, economic and social structures*** can lead us to sustainability.
- ***Explores power relationships*** in our communities, schools, workplace and wider world and questions the motivations, interests and powers behind hierarchies and leadership.
- Helps to ***identify root causes of problems***, instead of just their symptoms. It constantly challenges us to look beneath the symptoms of unsustainable practice to find the deeper underlying causes.
- Together with values clarification helps us to ***explore the influence of culture*** in shaping our views of the world.
- Develops the ***ability to participate in change***, both individually and collectively and to develop a sense of our own power to shape our own lives.
- Creates a ***greater personal relevance*** in, and connection to change for sustainability through the clarification of our own values and their origins.
- Provides ***new inspiration*** for contributing to change for sustainability in genuinely autonomous and authentic ways. This is achieved through reflection on what sustainability means to us in our own lives, given our own values and cultural context.
- Provides a ***new perspective*** through which the world can be viewed. This enables people to identify obstacles to, and opportunities for change.
- Helps to construct and explore ***alternative ways of thinking.***

Box 1.49
Key Texts and Resources on Critical (Reflective) Thinking

- Doppelt, B. (2003) *Leading Change Towards Sustainability: A Change Management Guide for Business, Government and Civil Society*. Sheffield, England: Greenleaf Publishing Ltd.
- Huckle, J. and Sterling, S. (1996) *Education for Sustainability*. London: Earthscan Publications.
- Kearins, K. and Springett, D. (2003) 'Educating for Sustainability: Developing critical skills' *Journal of Management Education* 27, (2) pp.188-204.
- Saul, D. (2000) 'Expanding Environmental Education: Thinking Critically, Thinking Culturally' *Journal of Environmental Education* 31 (2) pp.5-7.
- Tilbury, D. and Wortman, D. (2004) 'Critical Thinking and Reflection' Chapter 3 in Tilbury and Wortman (2004) *Engaging People in Sustainability*. Gland: IUCN.
- Huckle, J. (1998) *What we consume: ten curriculum units dealing with the issues of environment and development.* Goldalming: WWF UK and Bedford College of Higher Education.



iv) Participation in Decision-Making

Box 1.50
Linking Ownership to Implementation

Government agencies have relied on forms of participation for many years. Participation is used to describe the activities of steering committees and reference groups which provide direction, guidance and community representation of views. Participation is also a way of encouraging people to learn about differences in perceiving an issue and work together to resolve an issue. Processes that are participatory in nature often create a strong link between people having ownership of a solution and its implementation.

Extending this assumption, the greater the degree of decision-making, the more likely a higher degree of ownership of the decision and therefore improved likelihood of implementation of the solution.

The range of participatory engagement activities undertaken by government agencies in the field of environment and sustainability include:

- informing the community of policy directions of the government;
- consultation as part of a process in development of government policy, or building community awareness and understanding;
- involving the community in activities and collaborative action; and
- empowering the community to make decisions, implement and manage change processes.

Text adapted from Government of Victoria (2004, Section 2.2)

The word 'participation' is very commonly used in learning for sustainability policies and programs. Participation can take many forms that involve stakeholders to varying degrees, ranging from consultation and consensus building to decision-making, risk sharing and partnerships. Some describe these different levels of participation on a continuum ranging from manipulation or passive participation, to an increasingly shared process, and finally to full stakeholder engagement in, and ownership of, decisions and outcomes (see 'Focus On: Models on Levels of Participation' on page 40). When used in the learning for sustainability context participation is linked to notions of decision-making for sustainability rather than merely consultation or active engagement. It is a key goal of such approaches as well as the 'content' associated with projects in this area of learning.

The rationale

The term 'participation' is not new to environmental educationists who have, over the past decades, sought ways of actively engaging people in environmental issues. The sustainable development literature recognises that participation is an integral part of the process of change. '*Agenda 21*'[116], following the Rio Earth Summit in 1992, repeatedly acknowledges broad participation as a key component of sustainability. Throughout its many chapters, *'Agenda 21*' highlights the importance of participation in integrated decision-making; in involving different sectors and stakeholders to build capacity and ownership of solutions; in recognising the role of indigenous communities; and in empowering both the poor and women in the management of natural resources[117] (see also Box 1.50). This role has also been reinforced by the World Summit on Sustainable Development in its '*Implementation Plan*'[118] which endorses participation as a basis of good governance.

Participation in Sustainability:
Participation in and for sustainability is an important way of recognising the value and relevance of 'local' or 'context specific' knowledge. If properly undertaken, this knowledge becomes part of the decision-making process and weighed-up with knowledge from other sources. Solutions are developed relevant to each community or stakeholder group. Rather than relying on outside specialists or managers, participation can engage more stakeholders in becoming a part of the process of self-governance and decision-making. Successful participation for sustainability involves a wide range of stakeholders and provides opportunities to build a shared vision, a greater sense of unified purpose and community identity.

Through participation, people can build skills to take control of both the decision-making process and responsibility for its outcomes. This greater control leads to greater motivation to participate in actions, whether they are community projects, political action, democratic decision-making or community leadership roles.

Participation in learning for sustainability: Genuine participation in the learning experience is essential to building people's abilities and empowering learners to take action for change towards sustainability. Through participation learners are at the centre of the active participatory experience with learning, facilitation and decision-making in the hands of the learners themselves. In learning for sustainability approaches, the community leader, group facilitator or educator is not considered the 'expert' but instead is a *facilitator* dedicated to helping learners to rethink and take decisions and actions aligned with sustainability. This process of participation is more likely to lead to permanent changes as compared to participation in one-off events. Building skills for participation gives 'non-specialists' the opportunity to actively participate, build knowledge and develop leadership skills that contribute to action.

In practice

Stakeholders cannot be expected to engage with issues of sustainable development just by providing them with information. To go beyond awareness raising, EE needs to be more than a resource or a website (see Box 1.51). It needs to engage people in an education process – this is where participation holds the key to change. Even if the information is presented in an attractive and very accessible manner the information still has to be accessed, read and actioned. This combined with the fact that there is often no real priority attached to sustainability (or indeed learning for sustainability) means that it is unlikely to change practice unless stakeholders are engaged.

It is for this reason that many government agencies are using participation and learning approaches as the basis for developing national strategies for sustainability (and learning for sustainability). In this way the very process of strategy development equips stakeholders with the critical skills required for change towards sustainability such as participatory problem-solving and shared decision-making. Sustainability requires a new kind of participative democracy rather than merely a representative democracy. Participation in strategy development facilitates the development of stakeholder relationships. This can serve to catalyse partnerships, both within and often beyond the bounds of the strategy. Adopting this type of approach also facilitates network-building and improves communication across multiple stakeholder groups[119].

A participatory approach to strategy development has also been advocated in the development of action plans for Local Agenda 21 (LA21). LA21 is an international sustainability planning process that provides an opportunity for local governments to work with their communities to create a sustainable future. It promotes the idea that local governments educate their communities, raise awareness about issues of sustainability, engage in dialogue to learn from and exchange information with their communities[120]. Community participation encourages the construction of knowledge through processes of dialogue and building communities' capacities, whilst challenging social and political constraints[121]. By involving the community in such processes a more complex collective understanding of issues and more innovative strategies of action may emerge[122]. LA21 is placing a clearer focus on community participation in envisioning, planning, management and decision-making for sustainability at a local level[123].

Box 1.51
More Than Just a Website, We Need Dialogue

'It really is not appropriate, I think, to put material on a website and hope that somehow it will have an impact across the system. Sustainable development itself is quite a complicated idea, it is also contested. If you are going to work with that…you need to converse and have a dialogue…how to contribute and where it takes you.'

David Lambert as cited in House of Commons, Environmental Audit Committee (2005, p.31 para 78)

Box 1.52
The Challenges of Meaningful Participation

'Participation as a process for sustainability is not without its challenges, which should be carefully considered in scoping for and management of participation in projects. Meaningful participation is a time consuming process, requiring patience, continued commitment throughout the project and the willingness to put decisions about outcomes in the hands of participants. Shifts to full participation require conflict management skills, and an awareness of existing power relationships and gender and cultural issues within and between participating groups. Some groups, such as youth, women and the elderly, may not have equal access to participation in communities, and changing these power relations can induce potent consequences.

Participation as a process in education for sustainability also must occur in an environment of support, understanding and patience. Participation challenges power relationships and hierarchies by putting decision-making and leadership in the hands of learners. This can create anxiety for learners used to 'top down' learning approaches and unaccustomed to its empowering messages. Facilitation can support positive group dynamics, and help learners to build confidence and celebrate successes. While change tends to be slower and mere difficult, it is also deeper and more permanent.'

Tilbury and Wortman (2004, p.60)

Focus On:

Models on Levels of Participation

Typology	Characteristics of each type
1. **Manipulative Participation**	Participation is simple pretence, with 'people's' representative on official boards but who are not elected and have no power.
2. **Passive participation**	People participate by being told what has been decided or has already happened. It involves unilateral announcements by an administration or project management without listening to people's responses. The information shared belongs only to external professionals.
3. **Participation by consultation**	People participate by being consulted, and external people listen to views. These external professionals define both problems and solutions, and may modify these in light of the people's responses. Such a consultative process does not concede any share in decision-making, and professionals are under no obligation to take on board people's views.
4. **Participation for material incentives**	People participate by providing resources, for example labour, in return for food, cash or other material incentives. Much on-farm research falls into this category, as farmers provide their land but are not involved in the experimentation or the process of learning. It is very common to see this called participation. People have no stake in prolonging activities when the incentives run out.
5. **Functional participation**	People participate by forming groups to meet predetermined objectives related to the project, which can involve the development or promotion of externally initiated social organisation. Such involvement does not tend to be at early stages of project cycles or planning, but rather after major decisions have been made. These institutions tend to be dependent on external initiators and facilitators, but may become self-dependent.
6. **Interactive participation**	People participate in joint analysis which leads to action plans and formation of new local institutions or the strengthening of existing ones. It tends to involve interdisciplinary methodologies that seek multiple perspectives and make use of systematic and structured processes. These groups take control over local decisions, and so people have a stake in maintaining structures or practices.
7. **Self-mobilisation**	People participate by taking initiatives independently of external institutions to change systems. They develop contact with external institutions for the resources and technical advice they need, but retain control over how resources are used. Such self-initiated mobilisation and collective action may or may not challenge existing inequitable distribution of wealth and power.

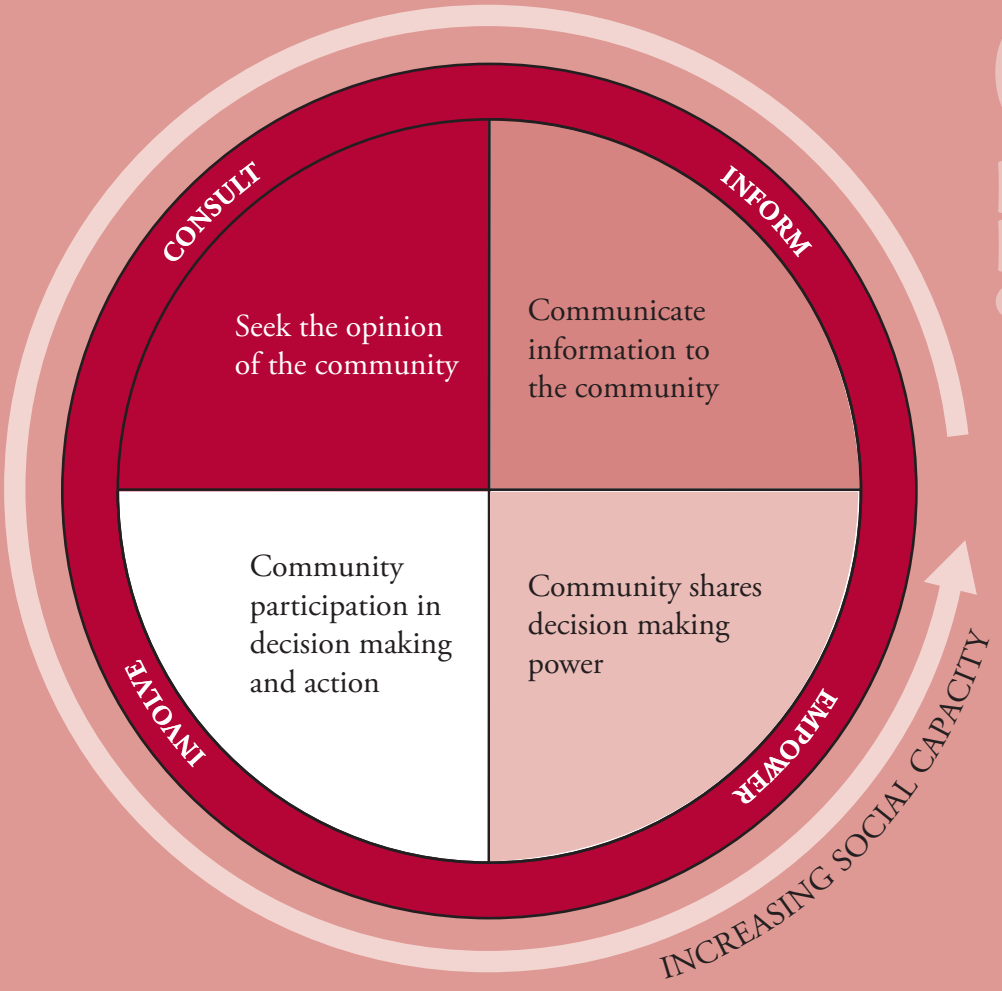
Model 1: Adapted from Petty, J. and Hine, R. (1999) *Participatory Appraisal for Community Assessment Centre for Environment and Society*, University of Essex http://wwww2.esex.ac.uk/ces/Research Programmes/pa&caoverview.htm
Source: Government of Victoria (2004)

Model 2: Arnstein's Ladder

8	Citizen Control	Degrees of Citizen Power
7	Delegated Power	
6	Partnership	
5	Placation	Degrees of Tokenism
4	Consultation	
3	Informing	
2	Therapy	Non-participation
1	Manipulation	

Amstein, S.R. (1971) 'A Ladder of Citizen Participation in the USA'. Journal of Town Planning Institute 57(4).
Source: Government of Victoria (2004)

Model 3: Wheel of Engagement.
The Wheel of Engagement was first developed by Pryosusilo, K.Pilioussis, C., Phellips, E., and Gooey, M., (2002) of the Community Strategies Section of Catchment and Water Division (Department of Natural Resources and Environment).
Source: Government of Victoria (2004)



The importance of participation in implementing sustainability is not limited to the community context; it has implications for how we change organisations towards sustainability (see Box 1.52). It is also very relevant to the formal, further and higher education sectors as it helps to bring about new models of managing, teaching and learning (see also Volume 2 and 5 of this series[124]).

How does participation occur?

- Participation occurs by actively involving learners in **building knowledge** through dialogue about issues, questions or problems in small groups.This provides opportunities for all learners to contribute and reflect on the contributions of other participants.
- **Dialogue** can be stimulated by group discussion, community theatre or participatory mapping. By interacting with others and reflecting on their views and perspectives, it is possible to develop a clearer understanding of one's own beliefs, ideas and arguments for sustainability. A participant's understandings of their own perceptions, values and concerns becomes the starting point for change.
- In practice, it is important to provide opportunities for participants to develop confidence in the act of participation which can be a very threatening or uncomfortable experience for some. Participants need to have the **confidence** to share knowledge, negotiate with others, develop persuasion skills, think through problems and practice leadership.
- Participation for participation sake does not meaningfully contribute to sustainable development. Learning activities need to help participants to **breakdown decision-making hierarchies** in communities, stakeholder groups or organisations, and empower people to contribute to real change.

The Victorian Government Department for Environment and Sustainability[125] has interpreted community participation and engagement as an investment for sustainability. They see participation as serving two goals – informing environmental policy (through dialogue) and building social capacity to implement this policy (through experience and skill development). It is the process of learning for sustainability which enables the above outcomes to be achieved. This is based on the premise that if you provide learning opportunities for the community to engage effectively then it will be empowered to understand, own and address issues leading to more sustainable outcomes[126] (see 'Focus on: Effective Participation' on page 43).

In summary

Learning for sustainability goes beyond a means of initiating learners to take a single action, such as planting a tree. Rather, it makes **long-term participation** a goal in itself by building the capacity of learners to lead, and to make their decisions. With the creation of these lifelong skills they are more likely to take action with greater confidence in their own capacities.

Participation provides the vehicle and the context for learning for sustainability. It provides opportunities for learning which in turn provide the skills and ownership needed to enable change for sustainability. One very effective method to facilitate people's engagement and participation is through the careful use of partnerships, which is explored further in the following theme. Ultimately, the process is seeking to **engage people in effective decision-making for sustainability** and not merely in participation for its own sake.

Effective Participation

Focus On:

The Six C's to Effective Participation in Sustainability Issues

A recently released resource from the Department of Environment and Sustainability, Victorian Government entitled 'Effective Community Engagement' identifies 6 C's to effective participation and engagement in sustainability issues:

- **'Capability:** the members are capable of dialogue.
- **Commitment:** mutual benefit beyond self-interest.
- **Contribution:** members volunteer and there is an environment that encourages members to 'have a go' or take responsibility/risks.
- **Continuity:** members share or rotate roles and, as members move on, there is a transition process that sustains and maintains the community corporate memory.
- **Collaboration:** reliable interdependence. A clear vision with members operating in an environment of sharing and trust.
- **Conscience:** embody or Invoke guiding principles/ ethics of service, trust and respect that are expressed in the actions of the community.'

Government of Victoria (2004, Section 2.1)

Empower

Empowered communities share decision-making. Legislative and policy frameworks give power to communities to make decisions. The community may have the power to make a limited range of decisions (e.g. on a specialised issue or for a limited time) or may have extensive decision-making powers. The following are general guidelines for empowering communities:

- There must be a clear legislative, policy and governance framework for the community to lead the decision making process.
- There must be a clarity about the scope of the shared power.
- There must be clarity about the roles and responsibilities.
- Communities need sufficient resources to enable empowerment.

Implications: This is the most challenging approach of community engagement. The promise by users of this process is to maintain a high level of engagement during the development, design and implementation of the approach.

Those who do not participate to this extent risk breaking the principles of inclusiveness, transparency and enhancement of trust. The rewards of an empowerment approach are often more innovative results that incorporate the knowledge of all participants as well as reduced conflict, greater ownership of outcomes and commitment to ongoing action.

Extract from Government of Victoria (2004, Section 5.5)

Involve

Involve refers to processes where decisions are negotiated with the community, in a context where government generally retains the responsibility for decision-making. These processes vary from decision-making with relatively limited scope, to examples where the community has a role in proposing policy options and shaping policy dialogue. In a decision-making context, examples include taskforces and citizens' juries.

The following are general guidelines for involving the community:

- Know who needs to be involved in decision-making, activities and programs.
- Ensure all relevant people are given the opportunity to be involved.
- Consider carefully what structures and processes are appropriate for the purpose and who is to be engaged.
- Avoid misunderstanding and ambiguity by clearly establishing the basis for membership of bodies such as boards for committees (e.g. skills vs representation), decision-making processes (e.g. voting vs consensus) and roles and responsibilities at the outset.

Implications: This level of engagement demands a higher level of participation and inclusion with citizens and stakeholders. Those who develop community engagement plans at this level must work with citizens and stakeholders to ensure their concerns and issues are directly reflected in alternatives and solutions and be explicit to how input influenced decision-making.

Extract from Government of Victoria (2004, Section 5.5)

Participation[127]:

- Involves learners throughout the process creating a ***greater sense of ownership*** and commitment to actions for the agreed goals.
- ***Increases the confidence of learners*** to participate, particularly in groups that may be marginalised in the community.
- Builds the capacity of learners for ***self-reliance and self-organisation*** and increases community identity. With the creation of these lifelong skills they are more likely to take action with greater confidence in their own capacities.
- Develops in learners the ***capacity for ongoing, long-term*** **participation** in change for sustainability. The impact of this goes beyond the lifespan of the specific project to have influence in all future activities.
- Actively ***builds knowledge*** among learners through a dialogue.
- Helps put ***decision-making and responsibility for outcomes*** in the hands of participants creating greater motivation to participate in the implementation of solutions.
- Helps recognise the ***rights of all groups to participate*** meaning that a wide range of knowledge and viewpoints become part of the decision-making process.
- ***Improves the design of processes*** which truly engage people in sustainability and facilitates their implementation.
- Helps work towards ***developing context specific solutions*** which relate to their increased acceptance and long-term sustainability.

Box 1.53
Key Texts and Resources on Participation

- Borrini-Feyerabend, G., Pimbert, M. Farvar, A. Kothari and Y. Renard (2004) *Sharing Power. Learning by doing in co-management of natural resources throughout the world*. Cenesta, Tehran: IIED and IUCN/CEESP/CMWG.
- Borrini-Feyerabend, G. (1997) *Beyond Fences: Seeking Social Sustainability in Conservation. Vol.2 Resource Book*. Gland: IUCN.
- GreenCOM (2004) *Going to Scale: system-wide, collaborative action for livelihoods and the Environment*. Washington: Academy for Educational Development.
- Tilbury, D. and Wortman, D. (2004) 'Participation in Decision-making' Chapter 4. In Tilbury and Wortman (2004) *Engaging People in Sustainability*. Gland: IUCN.
- UK Government, Department of the Environment, Transport and the Regions (2000) 'Public Participation in Making Local Environmental Decisions' in *A Good Practice Handbook*. The Aarhus Convention, Newcastle Workshops: UK Government.
- UNESCO (2004) *Partnerships for Sustainable Development*: Report of the Secretary General UN Department of Economic and Social Affairs New York: UNESCO.
- Government of Victorian, (2004) *Effective Community Engagement*. Melbourne: Department of Sustainability and Environment.

v) Networks and Partnerships for Change

References to networks and partnerships have featured regularly in many pronouncements and international commitments on sustainability[128] which reflect the prominent role they have played in discussions ever since '*Agenda 21*'. It was at the Rio Summit where partnerships were identified as a critical component for the implementation of sustainability. The Summit promoted an 'action-oriented' formulation of sustainability partnerships[129]. Since then, there has been an increasing recognition that partnerships which share learning experiences can accelerate the process of change towards sustainable development (see Box 1.54). The 2002 *World Summit on Sustainable Development* reinforced this view, ending with a call for greater global partnerships for sustainability.

To maximise sustainability outcomes ideally these partnerships need to be based on a collaborative culture. This has particular implications for institutions and organisations which are based on a more traditional 'command and control' culture.

Today, over 290 'Type II' partnerships (see Box 1.55) between government, NGOs and the private sector have registered with the United Nations. These partnerships cut across several themes relevant to sustainability, from health to consumption and poverty alleviation. Many focus on the benefit of capacity building or technology transfer, while others seek to affect change in institutional frameworks. The concept has also been taken up by multinational companies who have promised new partnerships to help developing countries support new markets and work more closely with communities.

Partnerships are also at the core of the implementation plan for the *UN Decade on Education for Sustainable Development*. They are encouraged as a key component of programs across the spectrum, from formal education to community-based projects, and also from international networks down to regions within a country. It argues that planners and managers can increase the effectiveness of their programs by including a range of stakeholders in their design and management. Partners should include not only those with a diverse range of interests and perspectives on sustainability, but also those from various levels, from local to regional, national and even international levels.

The rationale

Working towards sustainability will require transformation in education, community and corporate institutional structures to allow for change to occur. These and other challenges of sustainability are daunting and so many are finding networks and partnerships are a vehicle for sharing responsibilities and learning how to address issues. Over the past ten years many voluntary, multistakeholder initiatives, partnerships between government, NGOs and business have begun to take root, demonstrating that they are a motivating force for change towards sustainability.

Box 1.54
The Culture of Sustainability

'The challenge of sustainable development is a difficult and complex one, **requiring new partnerships** - among governments, academic and scientific communities, teachers, nongovernmental organizations (NGOs), local communities and the media. All are essential to the birth of a culture of sustainability. Within governments, for example, education for sustainability is of direct concern not only to ministries of education, but also to ministries of health, environment, natural resources, planning, agriculture, commerce and others. New policies, programmes, resources and activities can be reported from almost every country, a sure and encouraging sign that education is beginning to be seen as a significant aspect of national sustainable development policies.'

UNESCO (2002, p.5)

Box 1.55
Classification of Partnerships - Type I or II?

Partnerships for sustainability are often referred to as 'Type I' and 'Type II' – a new classification system emerging from the Johannesburg Summit.

Type I are formal government partnerships which aim to fulfil agreed commitments.

Type II are voluntary and self organising partnerships which can be initiated by governments, international organisations or major groups. They complement Type I partnerships to translate political commitments into action. Ownership is shared between all partners.

Adapted from Kara and Quarless (Undated)

Box 1.56
Multi-sectoral partnerships

'Multi-sectoral partnerships can play a pivotal role in assisting sustainability approaches to be:

- Relevant to stakeholder and community needs.
- Resourced with expertise and finances.
- Responsive by maintaining links to current models of theory and examples of best practice.
- Reflective by evaluating and making changes accordingly.
- Reformative in change according to new ways of thinking and practice.

Henderson and Tilbury (2004, p.45)

Box 1.57
Working Together for Sustainability

'ESD should bring together a broad coalition of policy-makers, educators, NGOs and learners from varied traditions working towards achieving shared aims of sustainable development.'

Department Education Association as cited in House of Commons, Environmental Audit Committee (2005, p.23)

Because they are largely non-hierarchical, partnerships can be a strong innovative force in transforming institutions such as within the formal education sector and reorienting them towards sustainable development. Cross-sectoral partnerships among local, regional and national groups can add value to local initiatives by helping change larger institutional frameworks while maintaining local relevance (see Boxes 1.56 and 1.57).

The role of networks and professional partnerships in sustaining change within formal education has been supported by the work of Jasbir Singh[130] as well as by Danie Schreuder and Lesley Le Grange[131] who argue that they provide:

- the possibility of increasing the impact of education initiatives;
- the chances of long-term continuity;
- effective channels for the restructuring of teacher education;
- sustained curriculum developments in the long term; and
- an opportunity to support change through building the capacity of teachers to cope with and change at professional level.

In practice

Partnerships can be of all types, from contract driven and distant, to ones that cultivate shared visions, knowledge and action. They can vary in what they look like, why they are important and how they are formalised. And while partnerships are important at the higher program level, they also offer several benefits for the many community-based projects at the local level working towards sustainability.

Documented experiences suggest that networks and partnerships are helping participants to:

- create synergy in their work to maximise opportunities for all involved;
- combine resources, talents and foster long-term relationships between partners to encourage mutual benefit and development;
- reflect on their values, visions and missions, and they can create a space to build shared visions as well as develop new ideas and strategies;
- motivate action for the future as they provide a forum for mutual support and encouragement, where successes can be celebrated;
- build expertise and capacity which can help to secure financial and technical support from funding sources. As individual partners may be specialised in one area, they may lack the staffing or financial abilities to commit to long-term change for sustainability. By combining resources and financial assets, and pooling technical skills with others they can develop the broad and long-term ideas and strategies necessary for change;
- break hierarchies and challenge traditional power structures; and
- help to challenge mental models by bringing together individuals and groups with different perspectives and from different levels - when learning together, shifts in perspectives and more long-term change is likely (see Box 1.58).

Those working with learning for sustainability approaches are pioneering new ideas and ways to address problems in their communities, schools or business. By bringing together different groups with

diverse knowledge and skills, partnerships can help to build collective knowledge through a process of social learning[132]. Often multi-sectoral partnerships are more strongly encouraged than partnerships within sectors as they also create the opportunity for partners to build a shared vision, inspiring motivation to work together towards sustainability.

Partnerships depend on effective participation of stakeholders. These two components of learning for sustainability are closely linked and their relationship influences the outcomes sought.

The challenges of establishing 'real' partnerships

Guiding principles for partnerships have been described as 'fuzzy'[134]. Patricia Ryan cites numerous web sites and documents that promote the virtues of these partnerships and existing alliances however there has been no credible research into what constitutes an effective partnership for sustainability. Key questions which need to be asked include:

- 'What do partnerships for sustainability look like?
- What are their essential components?
- Who should be involved, and what are their roles and responsibilities?
- How can we form effective partnerships, and what value can each partner bring to a partnership?
- How can we establish a long-term culture of partnerships?'[135]

Patricia Ryan[136] also warns us that there are no 'shelf' models of sustainability partnerships but

Box 1.58 SEED: Supporting Entrepreneurs in Environment and Development

The SEED Initiative aims to inspire, support and build the capacity of locally-driven entrepreneurial partnerships to contribute to the delivery of the *Millennium Development Goals* and the *Johannesburg Plan of Implementation.*

This IUCN, UNEP and UNDP, government and industry initiative has many partners. It focuses on 'business as unusual' - innovative action delivering real solutions through project cooperation among small and large businesses, local and international NGOs, women's groups, labour organisations, public authorities and UN agencies, and others working in the field of sustainable development.

Through a biennial international award scheme, intensive capacity-building activities and a research programme, the Seed Initiative:

- stimulates and builds the capacity of entrepreneurial, nascent partnerships to execute action on the ground;
- creates a conduit for investment in partnerships;
- disseminates good practice and lessons-learned from successful partnerships to inspire further new partnerships; and
- generates evidence-based research to assist policy makers.

When the final deadline for the submission process of the inaugural Seed Awards closed mid August 2004, over 260 new partnership proposals had been received, from sixty-six countries, representing more than 1,200 organisations. The thematic issues addressed are very diverse, ranging from agriculture to eco-tourism and the empowerment of women. The vast majority of the project proposals are designed as local initiatives for local people, having their focus in developing countries.

UNEP DTIE (2005)

Box 1.59 University Leaders for a Sustainable Future (ULSF) Worldwide

The ULSF has encouraged partnerships to make sustainability a major focus of teaching, research, campus management and outreach at colleges and universities around the world. The ULSF, in collaboration with the International Association of Universities, COPERNICUS-Campus and UNESCO has formed the Global Higher Education Network for Sustainability Partnership (GHESP). One initiative of this partnership is the GHESP Resource Project, a multi-year project to provide regionally relevant resources, tools and change strategies to individuals and institutions around the world. To strengthen partnerships, ULSF hosts workshops and consultations on a range of timely issues including sustainability assessment, faculty development for environmental sustainability and using the Earth Charter as a tool for teaching about sustainable development.

The ULSF serves as a secretariat to the 280 universities in 40 countries worldwide that have signed the Talloires Declaration of commitment to education for sustainability in teaching and practice. It purses its mission through advocacy, education, research, assessment, membership support and international partnerships to advance education for sustainability. It is working to help universities accept moral responsibility and leadership for responsible education, and to make sustainability a unifying principle across campuses around the world.

University Leaders for a Sustainable Future (2004)[133]

Focus On:

Working Together Towards Sustainable Development

What makes partnerships work? What undermines them? And what is needed to establish and sustain effective partnerships?

The International Institute for Sustainable Development (IISD) has been interested in partnerships as a mechanism for achieving sustainable development ever since it was first established in 1990. It is currently studying the:

- Types of partnerships and peak moments of partnership excellence.
- Planning processes for partnerships.
- Communication tools for partnerships.
- Evaluation of partnerships and their outcomes.

As part of this study, IISD hosted an e-conference which nearly 500 people subscribed to. A number of useful conclusions about partnership practice can be drawn from the discussion:

1. The success of a partnership can be determined by:

a. the attainment of its immediate objectives;

b. the quality of the partnership experience itself (respect and trust demonstrated among the partners, the sharing of knowledge, the leveraging of resources, the resolution of conflict); and

c. the realisation of the 'multiplier effect': when the partnership results in additional (or unexpected) benefits (influencing organisations, policies and practices beyond the immediate activities of the partnership).

2. There are four requirements for partnerships to be successful:

a. There must be a compelling motive for the organisations to come together.

b. The organisations must undertake real work together (moving beyond information sharing to action).

c. Organisations must learn how to work with each other in the partnership.

d. Organisations must communicate the results of their partnership to others.

3. To work together effectively, partners should share a common vision for and commitment to the partnership. Shared values are also important, including a common commitment to sustainable development.

4. Partnerships can have significant asymmetries among the partners, in terms of size, influence and resources brought to the table. Partners do not need to have the same expectations in common, but they do need to understand each other's objectives. There must be mutual clarity and understanding among partners as to what they expect to gain or accomplish through the partnership.

5. Particular attention should be paid to the equitable treatment of southern / transitional country partners, to ensure the use of their knowledge and expertise, and to compensate them fairly for their contributions.

6. Attention to planning, structure and decision-making mechanisms can help to keep partnerships on track. Partnerships can experience strong external influences on their efforts (political, religious, financial). Unless the partnership is well organised and the institutional commitments are in place, such influences can significantly derail the partnership.

7. Individual organizations are always affected by the experience of working with others. Organisations should be prepared to be flexible and adaptable in their own internal business processes in order to work more efficiently with their partners. Organisations should be prepared for and embrace the change process.

8. There is still a gap between problem solving at the local level, and the ability to influence policies that may have led to the problem in the first place. While success may lie in addressing problems at the local level, the partners should also consider how to communicate their success to decision-makers nationally, and how to inform the international community of their work.

9. The communications tools for working together and exchanging knowledge range from instant messaging to theatre. Partners must agree early in their work on which tools they will use, building the capacity of those partners who are not as equally prepared in terms of familiarity and infrastructure as others.

10. There is a growing recognition that monitoring and evaluation of partnerships is necessary to ensure the work is being done, and to keep partners together. However, there is still very limited understanding on how to do this simply and effectively, within available time, staff and financial resources.

11. Long term support for the partnership modality can be provided by the following:

a. The donor community should move beyond "short burst project funding". Donors could benefit from more capacity building in understanding how partnerships function and how to support them financially.

b. Private sector support has been observed to be very successful at the local level - direct support to communities and community based organisations.

c. Governments play several support roles:

i. Maintaining or increasing financial and political commitments to local / national partnerships (e.g., Local Agenda 21 implementation) and to international funding mechanisms (e.g. the GEF).

ii. Creating the enabling conditions for partnerships (policies, incentives, infrastructure needed for partnerships).

12. Partnerships can lead to improved accountability of individual sectors and organisations. The partnership modality has the potential to lead to new forms of democracy, where decision-making is shared across sectors.

For the full report of issues and findings, read the final report of the consultation entitled: 'Virtual Exhibition E-Discussions: Working Together for Sustainable Development' by *Creech and Willard (2002)*

Focus On:

perhaps a review of experiences in LA 21 could assist with addressing some of the questions identified above (see 'Focus On: Partnerships in Local Agenda 21' on page 51).

Creating lasting partnerships for sustainability requires time and persistence, as well as predictable and sustained resources for implementation. Partners may initially be threatened by a lack of trust - transparency in decision-making and dialogue can help to build such trust. Other issues may include ensuring complete representation of stakeholders, and maintaining the commitment and motivation of partners over time.

Establishing partnerships is a learning process, particularly in EE which has had limited exposure to cross-sectoral partnerships. Indeed EE national conferences are mostly attended by those involved in formal education and have only recently involved community educators. More government and business stakeholders need to engage with these professional meetings to extend the dialogue and challenge entrenched mental models (see Box 1.65).

In reality, the achievement of successful partnership outcomes - based on common objectives, clearly defined deliverables, where ownership is shared among all partners - has been identified as a major challenge[137].

In summary

Partnerships and networks are a key component of learning for sustainability. They provide both formal and informal opportunities for learning. Learning can take place during a meeting or through structured exchanges which allow reflection, development of understanding and questioning of mental models. Partnerships also strengthen ownership and commitment to sustainability actions. They are the key to implementing sustainability.

Partnerships in Local Agenda 21 (LA21)

Consistently, international documents such as Agenda 21, and the WSSD Plan of Implementation accept partnerships as integral to sustainability and thus a fundamental element of LA21. Partnerships have the ability to challenge the worldviews and assumptions of the partners, particularly those who have conflicting interests. Partnerships increase the impact of LA21 processes.

These partnerships often assist with:

- refining the concept and application of learning for sustainability;
- building on existing competence to create synergy;
- demonstrating commitment; and
- ensuring implementation.

Various types of partnerships can be adopted in the Local Agenda 21 process. International Council for Local Environment Initiatives (ICLEI) supports partnerships that are voluntary, multi-stakeholder, democratic and mutually beneficial, while the Australian Government recognises three types of partnerships found in LA21 programs across Australia:

1. Community driven LA21 programs with resources from local government.
2. Community as equal partner with local governments.
3. Community involved strategically or on a case by case basis.

Partnerships formed through LA21 attempt to engage the 'usual' stakeholders and actively seek partnerships with members of the community who have previously had little involvement in planning processes. An example of this in action was the development of the Northern Rivers Regional Strategy. This process involves building partner's capacity to effectively engage them in the decision-making processes required for sustainability.

South Australia is innovative in their approach to LA21 partnerships. With over half of all local governments in South Australia now participating in LA21 there are many examples of strong partnerships and learning for sustainability initiatives across the state (see Box 1.60).

For details of these programs see Volume 3 of this series (p.16).

Box 1.60
Partnerships for LA21

'A recent ICLE/CSD survey shows that more than 1800 authorities in 64 countries have begun work on Local Agenda 21 – or equivalent processes for sustainable development. Progress has been the greatest in countries where national campaigns have been set up. As of June 1996. these include Australia, China, Denmark, Finland, Japan, Netherlands, Norway, South Africa, Sweden and the UK'

Mills (1997, p.1)

Partnerships[138]:

- Create ***synergies between organisations*** to work for change.
- Bring together people and partners with ***different perspectives*** to reconcile interests and challenge world views.
- Foster building ***shared visions*** among partners.
- Allow partners to ***combine resources*** and talents.
- Increase capacities to attract ***financial and technical support.***
- Help to ***break hierarchies*** and power relationship by linking partners at different levels and across different disciplines.
- ***Add value*** to local initiatives while maintaining relevance.
- ***Help motivate*** partners to work toward long-term, institutional change

Box 1.61
Key Texts and Resources on Partnerships

- Creech, H and Willard, T. (2002) '*Virtual Exhibition E-Discussions: Working Together for Sustainable Development*'. Available at http://www.iisd.org/pdf/2002/networks_virtual_ediscussions.pdf [Accessed 9 August 2005}
- Huckle, J. and Sterling, S. (1996) *Education for Sustainability*. London: Earthscan Publications
- Ryan, P (2003) 'Sustainability partnerships: eco-strategy theory in practice? *Management of Environmental Quality: An International Journal* Vol 14 no.2 pp.256-276.
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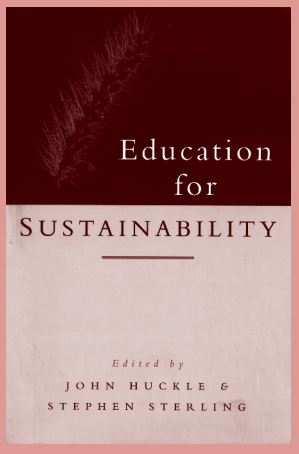
- UNESCO (2004) *Partnerships for Sustainable Development: Report of the Secretary – General*. UN Department of Economic and Social Affairs, New York: UNESCO.
- UNESCO (2003) *United Nations Decade of Education for Sustainable Development (2005-2014): Framework for the international implementation scheme*. Paris:UNESCO.
- United Nations Division of Sustainable Development (undated) *Frequently asked questions about partnerships*. Accessed September 2004 at http:///www.un/org/esa/susdev/partnerships/faq_partnerships.htmlpartnership1



1.4 Overview of Learning for Sustainability Policy and Practice in Australia

There have been a number of national developments over the past five years that help contextualise learning for sustainability policy and practice in Australia. The catalyst for these developments was the '*Environmental Education for a Sustainable Future National Action Plan*'[139] launched in July 2000. The purpose of the National Action Plan is to provide better coordination of activities and to support leadership across major groups and at various levels. The document interprets EE very broadly and recognises needs across formal education, further and higher education and community education, as well as business and industry (see 'Focus On: Environmental Education for a Sustainable Future: A National Action Plan for Australia' on page 54).

The Australian Government's commitment to implementing the National Action Plan resulted in a number of initiatives:

a) The National Environmental Education Council (NEEC) was established in July 2000 as a non-statutory body providing expert advice to the Minister for the Environment and Heritage, as well as to the federal Department of the Environment and Heritage. It provides advice on the effectiveness and profile of the Australian Government's EE and learning for sustainability activities and assists in identifying priority needs in Australia (see Box 1.62). The NEEC, which meets three times a year, is composed of key stakeholders from business and industry, community education, EE professional associations, as well as school, vocational and university education.

A recent focus for the Council has been the establishment of Working Groups. With the approval of the Minister for the Environment and Heritage, individuals with expertise in the further and higher education, compulsory schooling and industry sectors were invited to join working groups. The Working Groups meet as needed to discuss issues relevant to each sector. Deliberations and recommendations are then put forward to the full Council for endorsement[140].

b) The National Environmental Education Network (NEEN), established in May 2001, brings together government managers from environment and education portfolios from across Australia. The purpose of the network is to improve coordination of the delivery of environmental education, exchange information and share resources between States, Territories and national bodies. NEEN supports the development of quality government programmes and materials and provides a platform for exploring the theoretical aspects of EE in Australia. The Network mostly exchanges information electronically or in hard copy, with limited face-to-face contact. It has a Sustainable School sub-working group which has been active in advancing management structures and identifying principles

Box 1.62
National Environmental Education Council (NEEC)

The National Environmental Education Council plays a central role in the implementation of the National Action Plan through raising the profile of EE and providing expert advice to the Australian Government on EE issues, in particular, how Australians can move beyond environmental awareness to informed action for sustainability.

The Council is responsible for:

- maintaining an overview of national EE programs and materials;
- identifying priority EE issues for national action;
- identifying priority EE research needs in Australia;
- providing strategic advice on the EE activities of the Environment and Heritage Portfolio;
- advocating practical EE in all spheres of education and formal training in vocational, business and industry and community education sectors;
- providing advice on the establishment of an EE Research Foundation; and
- providing annual reports to the Minister with recommendations for further implementation of the National Action Plan.

Adapted from Department of the Environment and Heritage (2005b)

Focus On:

Environmental Education for a Sustainable Future: A National Action Plan for Australia

Australia's National Action Plan for Environmental Education was launched by the Minister for the Environment and Heritage in July 2000. It outlines the Australian Government policy in EE. The National Action Plan was developed after considering comments on the discussion paper '*Today Shapes Tomorrow: Environmental Education for a Sustainable Future*' [141]. The Plan is intended to provide a higher profile for EE, better coordination, enhanced professional development for teachers and others involved in EE, improved resources and the integration of EE into mainstream education and training activities[142].

Australia's National Action Plan is a landmark document as it is the first attempt at a national approach to EE. The document is intended to provide direction and support the development of EE across the sectors taking it beyond the classroom where EE activities have focused on.

Key initiatives of the Plan include:

- the establishment of the National Environmental Education Council (NEEC), an expert advisory body comprising people from a variety of sectors;
- the establishment of the National Environmental Education Network (NEEN) comprising representatives from Commonwealth, State and Territory environment and education agencies to promote better coordination of activities;
- the implementation of a research program to improve the quality of EE and achieve better outcomes; and
- better resourcing of EE through an Environmental Education Grants Program.

Adapted from the Department of the Environment and Heritage (2005b). Available at: http://www.deh.gov.au/education/publications/nap/index.html

History of implementing the National Action Plan

2005 - National Environmental Education Statement (NEES) is released.

2004 - Minister for the Environment and Heritage approved National Sustainable Schools Initiative funding for the Northern Territory and the Australian Capital Territory.

2004 - Australian Research Institute in Education for Sustainability (ARIES) received an additional $1.8 million for further research projects.

2004 - National Sustainable Schools Initiative launched with $2 million funding over four years.

2004 - Education Directors-General of all States and Territories agreed to the development of the first National Environmental Education Statement for Schools (NEES).

2003 - Australian Research Institute in Education for Sustainability (ARIES) is established.

2003-2004 - Additional funding approved for the extension of the Sustainable Schools Initiative to Queensland, Western Australia and South Australia.

2002-2003 - Pilot Sustainable Schools programs in New South Wales and Victoria implemented.

2001 - National Environmental Education Network (NEEN) established.

2000 - National Environmental Education Council (NEEC) established.

2000 - Environmental Education for a Sustainable Future: National Action Plan launched

for the Australian Sustainable School Initiative (AuSSI).

c) The Australian Research Institute in Education for Sustainability (ARIES), located at Macquarie University, was established in December 2003 to meet the Australian Government's need for research, as identified in the National Action Plan for EE. The Institute is working on a range of projects aimed at better understanding and achieving organisational and stakeholder change towards sustainability. The Department of the Environment and Heritage is ultimately responsible for identifying, defining and managing the projects to be undertaken by Macquarie University. Both NEEC and NEEN play important roles in setting the research agenda through the identification of priority areas for attention. In its first year it has undertaken the following projects: a review of wholeschool approaches to sustainability consisting of a analysis of international frameworks informing Sustainable Schools Programs; research into existing ICT tools that can assist industry to make changes towards sustainability; research into models of education about and for sustainability in MBAs and a comprehensive review of EE practices and their contributions to sustainability across sectors in Australia[143].

These initiatives are well positioned to influence EE practice in Australia which is still struggling to embrace learning for sustainability. The following section provides a brief overview of current trends across the sectors.

i) School Education

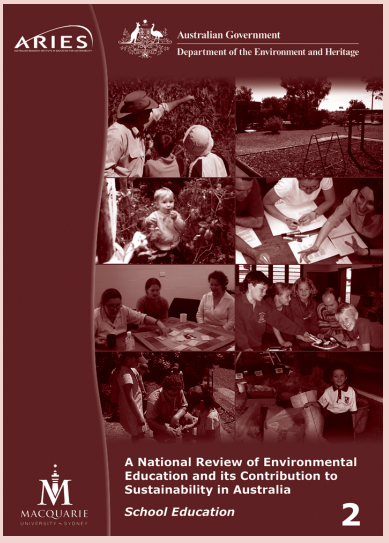
The formal education sector continues to be the dominant focus of EE thought and practice in Australia, but not the greatest supporter of learning for sustainability. EE is a non-mandatory component of schools with the exception of New South Wales (NSW) and, as a result, struggles for acceptance in mainstream formal and teacher education. It has a presence in the curriculum, but remains marginalised in practice. Science and Studies of Society and Environment, identified as key learning areas in the curriculum, provide opportunities for students to learn about the environment. Opportunities for modelling or developing understanding of sustainability in schools are limited. Similarly, the whole school approaches (see 'Focus On: Whole-School Approaches to Sustainability in Australia' on page 56) which involve staff, students and community in learning for change towards sustainability are rare.

Volume 2 of this series documents how the formal education sector has been the most resistant to change towards sustainability. Curriculum policy and guideline documents across the States have been slow to react to this thrust of EE and a few have only recently begun to take on the language of sustainability (see Box 1.63). Similarly, there are few EE programs with a sustainability focus, and even fewer courses that promote learning for sustainability.

In Australia, formal education is the responsibility of each State and Territory, so it is not surprising to find that the status and place of EE and learning for sustainability varies across the country. NSW, Queensland and Victoria have an EE policy document for schools. However, NSW is the only state where EE for sustainability is mandatory in

■ **Box 1.63**

For a more in-depth review of the contribution School Education has made to sustainability in Australia see Volume 2 of this series.



National Review of Environmental Education and its contributions to Sustainability in Australia: School Education – Key Findings

'We will not be able to strengthen the contribution of Environmental Education to sustainability in the school education sector solely through the integration of sustainability content into the curriculum. It will require a fundamental shift in current practice. This shift will require the establishment of whole-school approaches to learning for sustainability, which consider the infrastructure, management, curriculum and teaching approaches of the school….progress towards learning for sustainability in this sector [in Australia] bas been slow with many efforts only resulting in the integration of some sustainability concepts into curriculum content rather than in educational change.'

Tilbury, D., Coleman, V. and Garlick, D., (2005b, p.1)

Focus On:

Whole-School Approaches to Sustainability in Australia

In Australia, whole-school approaches to sustainability are rare. However, the Australian Sustainable Schools Initiative (AuSSI) is seeking to make this common practice across Australia. The Australian Government has committed $2 million to the initiative over four years. AuSSI not only seeks the presence of sustainability with the curriculum but also implements change within school management of resources and grounds (including energy, waste, water, biodiversity, landscape design, products and materials). The program is action based and seeks to involve the whole school community in learning for sustainability as well as in the sustainable management of the school. AuSSI does not replace other EE initiatives in schools but instead links to, and complements, existing programs through providing a framework for this area of learning and change.

Guiding Principles

The Australian Sustainable Schools Initiative:

- seeks to develop a school culture committed to the principles of Ecological Sustainable Development;
- seeks to go beyond awareness raising to action learning and integration with school curricula;
- encourages the involvement of the whole school community including teachers, students, administrative staff, grounds staff, canteen operators and parents;
- encourages the involvement of a school's local community including environment experts, local businesses, government and non-government organisations and encourages a shift in the broader community towards more sustainable practices and processes;
- seeks to develop relationships with organisations that impact on the management of a school (e.g. properties, facilities, operations and government supplies);
- is founded on a sound basis of theory and practice in schools and school systems, quality teaching and learning, values education, cultural and environmental change, environmental education for sustainability, organisational theory, systems theory, action research and community development; and
- encourages schools to achieve measurable social, environmental, educational and economic outcomes.

Benefits

The benefits to schools include:

- the opportunity to achieve curriculum requirements in the key learning areas e.g. conducting an environmental audit of the school addresses Mathematics and English outcomes;
- reduced consumption of resources and improved management of the school grounds;
- teachers and students working on real-life problems and outcomes;
- professional development opportunities for the whole school staff; and
- the school as a model for sustainability within the local community.

A set of indicators to record the environmental, educational, social and economic benefits of the initiative are being trialed in Victoria and Queensland.

Text adapted from Department of the Environment and Heritage (2005b)

government schools[144]. In Queensland, ACT and NT there are specific curriculum guidelines for EE – although the sustainability dimension is not very strong. In Western Australia (WA), South Australia (SA) and Tasmania, EE is integrated into the core curriculum documents and reflects some elements of sustainability thinking. There have been several calls for an Australian EE policy that represents a national agreement on the key curriculum aims and pedagogical principles for schools in the area of EE[145].

During the compulsory years of schooling, and despite its recognised cross-curricular nature, EE is still occurring predominantly in the Key Learning Areas (KLAs) of Science and Studies of Society and Environment[146]. However, reference to the environment and EE can also be found in Health and Physical Education, Technology and Mathematics. Furthermore, the general nature of some learning outcomes provides teachers with opportunities to deal with environmental issues and learning for sustainability in other KLAs. These opportunities can be found in English, Technology, Health and Physical Education, and the Arts[147].

A review of school practice, documented in Volume 2 of this series, found that in early childhood there are also very few examples of EE and current approaches tend to focus on a hands-on approach to nature, rather than on learning for sustainability. It documented evidence which suggests that although some teacher education and professional development courses may include EE concerns, these programs generally do not adequately prepare teachers to effectively use a learning for sustainability approach to EE in the classroom.

The review argues that in order to strengthen its contribution to sustainability in schools, EE will need to:

- build the capacity of educators across the school sector in learning for sustainability;
- continue to develop whole-school approaches to learning for sustainability which consider the management; curriculum; approaches to teaching practice; and infrastructure of the school; and
- develop strategic networks between educators, teacher educators and the school communities to work towards change for sustainability.

The reality is that EE remains a non-mandatory component of schools (with the exception of NSW) and still struggles for acceptance in mainstream curriculum in Australia. Across the States and Territories, curriculum policy and guideline documents have been slow to react to sustainability and only few have recently begun to take on its own language and concepts. As such, for most teachers and school managers, EE remains a low priority.

A very recent development has been the release of a National Environmental Education Statement. The Statement will provide a framework for schools to prioritise and address issues of learning for sustainability within their social contexts. It is argued that this initiative reflects a concerted effort by the Australian Government portfolios of education and environment to work together with EE in policy development and implementation[148] (see Box 1.64).

Box 1.64
A National EE Statement for Schools

2005 saw the release of '*Educating for a Sustainable Future: A National Environmental Education Statement for Australian Schools*'. This statement provides a nationally agreed description of the nature and purpose of EE and its contribution to sustainability through all years of schooling. It is intended to complement rather than replace existing State and Territory policies. It is to serve as a national reference point for:

- schools as they decide on their education programs from K to 12;
- professional learning programs for teachers;
- reviews of curriculum documents that refer to the environment and sustainability in relevant learning areas in all the States and Territories of Australia;
- developers of education materials for schools; and
- stakeholders who want to promote environmental education in schools.

The document is targeted at teachers, schools, education systems and developers of curriculum materials.

■ Box 1.65 Policy Instruments

Australia's National Action Plan recognises the importance of non-formal education as a key to lifelong learning and learning for sustainability. Underpinning the plan is the involvement of community stakeholders through action-oriented and learning approaches. Not only does the plan recognise the array of different stakeholders, but it also acknowledges the complexity of competing interests. The plan established funding opportunities for EE led by community organisations. It led to the establishment of Federal Grants for community EE projects.

Local Agenda 21, promulgated by the Federal Government , 'Hope for the future: The Western Australian State Sustainability Strategy', Education Victoria's 'Investing in the Future: Environment Education for Victoria's Schools' and the NSW government's strategy, 'Learning for Sustainability 2002-05' are examples of additional policy instruments that provide a framework for the design and implementation of community learning for sustainability.

Shown in photo: '*Learning for Sustainability: NSW Environmental Education Plan 2002-05'*[149] *and 'Investing in the Future: Environment Education for Victoria's Schools'*[150]. Department of Education: Victoria.

■ Box 1.66 Environmental Trust Fund grants for EE Projects

The Environmental Trust Fund is an independent statutory body established by the NSW government to support environmental projects that do not receive funds from the usual government sources. The trust is empowered under *The Enviromental Trust Act 1998*, and its main responsibility is to make and supervise the expenditure of grants. The trust is administered by the Department of the Environment and Conservation.

The program has a specific EE Grants Programs which aims to support educational projects or programs that develop or widen the community's knowledge of, skills in, and commitment to protecting the environment and promoting sustainable behaviour. The objectives of the grant's program are:

- to help attain one or more of the outcomes in the NSW Government's Environmental Education Plan, Learning for Sustainability;
- to facilitate changes in behaviour of individuals and groups which affect specific environmental problems; and
- to develop and promote education projects which improve the environment.

Grants of between $5,000 and $100,000 are available for projects that provide resources or undertake educational projects to increase the environmental awareness of individuals, specific groups, special interest groups and/or the general community. In 2005, the total funds to be offered under the EE Grants program were:

- $0.5 million will be allocated to the Community Organisations program and
- $0.5 million will be allocated to the State and Local Government program.

Competition for funds for Environmental Education projects is normally high. In the 2004 grants round, 199 expressions of interest with an upper value of $12.4 million were received and resulted in 35 invited applications totalling $3 million. The Trust approved 21 grants totalling $1.13 million.

NSW Government (2005a)

ii) Community Education

In Australia, community education has evolved over time to result in a diverse range of learning for sustainability programs initiated at governmental and non-governmental levels. Community EE ranges from 'add-on' or 'feel-good' programs that focus on information sharing to participatory programs that focus on action and lifelong learning aiming to build healthy and vibrant communities[151] (see Box 1.65).

Increasingly EE is focusing on the ability of the community to influence, share and/or control the decision-making process[152]. Inherent in this ability is a community's values, skills set, motivation and capacity to effectively and efficiently contribute to processes of change. In essence, the building of these capacities is a core objective of a learning for sustainability approach to EE[153].

The range of stakeholders involved in community EE programs in Australia is diverse. Each program defines the role and purpose of community stakeholders in contributing to successful community education process. Community EE providers in Australia include government agencies, community organisations, NGOs, networks and associations, businesses and higher learning institutions and operate from national to local scales. Directing these organisations are different polices and strategies that outline an organisation's learning priorities and contribute to the process and outcomes of the education provided. These priorities and the limited resources available to organisations mean that there is an immensely

diverse range of educational programs offered to communities.

Funding for community EE programs can be obtained from a variety of sources in Australia. Funding grants are offered through competitive processes or as one-off gifts. Government funding, in particular, generally includes assessment criteria, which are typically tied to outcomes-based performance and are determined through a competitive application process. Some grant authorities, such as the Environmental Trust Fund in NSW (see Box 1.66), strongly encourage cross-sectoral partnerships for EE programs.

Increasingly, community participants, providers and funding bodies are recognising the importance of partnerships in understanding the interconnectedness and political nature of sustainability, and in achieving systemic and structural change for sustainability. Partnership projects have been important in addressing imbalances in program content and methodology. Partnerships for community EE programs in Australia are established in one of three ways:

(i) from community concern/ commitments and aims to address local issues;

(ii) from a desire to attain funding for a specific project; or

(iii) from agencies external to local communities, with a view to developing and/or supporting particular functions within the communities.

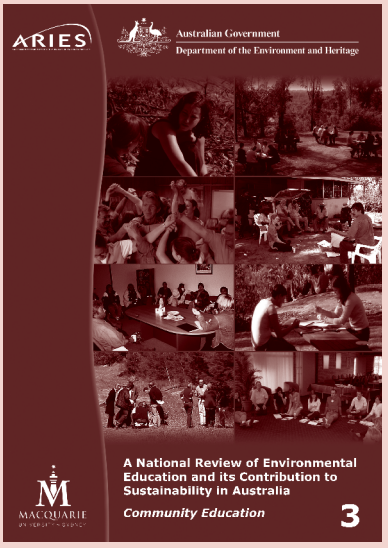
Partnerships have been instrumental in generating community capacity. Responsible and reflective partnerships are beginning to emerge to ensure mutually beneficial outcomes and the sharing of work/information across partner organisations and sectors.

A review of community EE initiatives in Australia, documented in Volume 3 of this series, found that recent EE initiatives that support sustainability in the community aim to enhance social capital, build community capacity for decision-making and build leadership capabilities in the community in order to improve the environment (see Box 1.67). It argues that traditionally, while citizens have been active in the alleviation of environmental problems, they did not usually address issues of sustainability at the source. To date, many community education programs have focused on a 'hands on' approach and have not ultimately built the capacity of participants/volunteers so that they can get to the root of the cause and/or sustain the action. For example participating in one-off events aimed at remediating the problem (such as litter clean-up campaigns) rather than alleviating the problem (such as the redesign of the waste collection system to improve its function). The review does however document a change in this trend. It argues that it is slowly being recognised that learning and action for sustainability requires democratic and negotiated engagement of a range of stakeholders and that community group (re)action alone will not achieve the level of change required for sustainability.

As a result, community EE is seeking to build the capacity of participants to direct their own learning and to recruit educators who can support this process. This separates traditional participation in community action (where the community might be involved in a preset activity such as planting, weeding, or making interpretive signs) from participation in learning and action for sustainability.

■ **Box 1.67**

For a more in-depth review of the contribution Community Education has made to sustainability in Australia see Volume 3 of this Series.



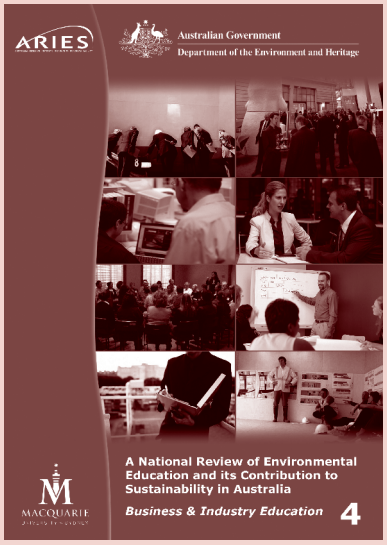
National Review of Environmental Education and its contributions to Sustainability in Australia: Community Education – Key Findings

'In practice, Community Environmental Education in Australia has evolved over time to result in diverse programs by government and non-government organisations. Traditionally, while citizens have been active in alleviating environmental problems, they did not usually address issues of sustainability at source. Increasingly, however, it is being recognised that learning and action for sustainability involve democratic, negotiated and pragmatic engagement, and that community (re) action alone will not achieve sustainability. This provokes the question of what capacity building is required for communities to make the leap from participation in (re) action for the environment to participating in more systemic change for sustainability.'

Tilbury, D., Coleman, V., Jones, A. and MacMaster, K. (2005b, p.1)

■ **Box 1.68**

For a more in-depth review of the contribution EE within the business and industry has made to sustainability in Australia see Volume 4 of this Series.



National Review of Environmental Education and its contributions to Sustainability in Australia: Business and Industry Education – Key Findings

'Within Australia, Environmental Education in the industry sector tends to focus on the technical knowledge and skills required to perform certain environmental job functions and there are many examples of successful programs of this kind. Typically these programs have a limited scope and do not seek to identify alternatives to current organisational policy and practice towards sustainability. It is rare to find industry education programs that motivate or build the capacity of participants to reorient current practice.'

Tilbury, D., Adams, K. and Keogh, A. (2005b, p.2)

The review also acknowledges the increasing trend to invest in social marketing techniques in EE. It points to how social marketing has enhanced knowledge and awareness of environmental issues but suggests that it has had little impact on the attainment of long term environmental outcomes. The review identifies a small number of social marketing campaigns that have been integrating aspects of reflective approaches which may help overcome its limitations.

Another trend in community education is the increase in the number of EE programs available for communities of culturally and linguistically diverse backgrounds in Australia. However, these programs are mostly confined to information sharing and awareness raising. Some are beginning to build community capacity and provide opportunities for community members to participate in decision-making and change for sustainability. This has been possible by adopting more action-oriented methodologies which are associated with learning for sustainability. For example, action research which engages the community through an action oriented, context specific, learning process.

The review suggests that in order to strengthen the contribution of EE to sustainability, community EE will need to:

- build the capacity of community based educators in learning for sustainability approaches;
- continue to provide incentives and support to include education and learning in community environmental and sustainability programs; and
- continue to develop strategic networks and partnerships between government, community groups and citizens for more coherent and consistent education actions for sustainability.

iii) Business and Industry Education

Recent studies show that many companies, large and small, are struggling with the agenda of sustainability[154]. Numerous state and federal government departments, NGOs, industry associations and private consultancies are seeking to address this by providing training courses, toolkits and other resources.

Companies, themselves, are investing in and developing education resources for their employees and, increasingly, their external stakeholders. A number of companies in Australia now quantify the training they provide in their annual or sustainability reports in line with the Global Reporting Initiative's (GRI) core indicator LA9 'average hours of training per year per employee'[155]. Others detail the number of employees that have attended certain training courses, especially those focusing on environmental management and occupational health and safety. However, few go further than this to consider the impact of their training and the contribution it makes to industry sustainability. Indeed, few companies appear to carry out any sort of evaluation, and those that do tend to rely on surveys which do not always provide the information required to truly assess learning and effectiveness.

Vocational education and training and government programs in EE for industry personnel are also offered but these mostly focus on compliance issues. Business Schools have begun to recognise the need to shift towards learning for sustainability but often lack the skills, capacity or leadership to action change[156].

In practice, EE programs targeted at business and industry tend to disseminate knowledge about sustainability. Yet, increased awareness and understanding about sustainability issues are only part of the solution, as they in themselves do not necessarily lead to change (see Box 1.68). Australian companies are currently inundated with information about sustainability, but progress towards more sustainable practice remains slow (see Box 1.69). This provokes the question of how can business and industry make the leap from information about sustainability to implementing change for sustainability.

A review of learning for sustainability practice in business and industry, documented in Volume 4 of this series, argues that there is still an inadequate body of knowledge about what effective programs in learning for sustainability look like within this sector.[157] There is not only a lack of case studies but also analysis of what is actually needed to engage this sector with appropriate learning for sustainability approaches to achieve environmental and sustainability outcomes.[158] The components of learning for sustainability can provide a basis to identify effective EE practice which will achieve change for sustainability within business and industry. Applying these, the national review documented in Volume 4 shows how informal learning through peer networks provides an important opportunity for addressing this need (see Box 1.70).

Within Australia, EE in the business and industry sector tends to focus on the technical knowledge and skills required to perform certain environmental job functions and there are many examples of successful programs of this kind. Typically these programs have a limited scope and do not seek to identify alternatives to current organisational policy and practice towards sustainability. It is rare to find industry education programs that motivate or build the capacity of participants to reorient current practice. A handful of progressive companies are showing leadership by educating their own stakeholders about and for sustainability. These companies are starting to integrate education and training programs into their Corporate Social Responsibility policies and sustainability reporting initiatives. Others are utilising approaches such as Life Cycle Analysis to increase dialogue amongst and between industries and generate organisational change whilst providing further opportunities in learning for sustainability and developing partnerships.

The compliance and performance approach promoted by much of the industry EE in Australia still has an important role to play in assisting changes to sustainability, but will not necessarily lead to deeper lasting change. For such change to occur, companies must define where they want to be and explore alternatives for getting there. This process of envisioning and futures thinking is critical for companies to align themselves with change towards sustainability and helps frame sustainability as an opportunity rather than a risk that needs to be minimised. The majority of the EE opportunities available to Australian business and industry differ from this approach, providing a one-way dissemination of information from 'experts' to companies instructing them exactly where they should go and how they should get there.

One barrier to deeper change is that companies often struggle to distinguish between environmental performance and the broader notion of sustainability. Those that have

Box 1.69
Resources and Toolkits for Sustainability

A recent research study of international toolkits (which included thirty-eight Australian resources) designed to engage industry on various aspects of sustainability found that business and industry are currently inundated with information about sustainability. The study showed that the resources did not however provide effective tools on how to progress sustainability within this sector. Few of the resources target job functions (such as quality assurance) within a company or specific business/industry areas (such as strategic planning, human resources). They were mostly untargeted and did not acknowledge the complex reality of implementing sustainability in an organisation. It was therefore unclear how these resources could assist business and industry to shift towards more sustainable practice.

Tilbury and Adams (2005)

Box 1.70
Informal Peer Networks

'It is thought that only 20% of what is learnt in the workplace comes through structured formal training. Informal interaction with peers is seen as the predominant way that many employees learn. These interactions range from chance meetings by the watercooler to official conferences and networking events. However, many organisations are oblivious to this 'invisible' everyday learning and do not invest time or resources in it. This is not to suggest that industry abandons formal opportunities for learning and training but to highlight the complementary role of informal learning – especially for people who cannot commit to higher education.

The best examples of peer networks enable participants to construct new knowledge by providing environments where the negotiation and creation of knowledge in sustainability can occur as well as reflection upon experiences which can assist in advancing their ability to implement sustainability.'

Tilbury, Adams and Keogh (2005a, p.6-8)

Box 1.71
The Talloires Declaration: Ten Point Action Plan:

1. Increase awareness of environmentally sustainable development;
2. Create an institutional culture of sustainability;
3. Educate for environmentally responsible citizenship;
4. Foster environmental literacy for all;
5. Practice institutional ecology;
6. Involve all stakeholders;
7. Collaborate for interdisciplinary approaches;
8. Enhance capacity of primary and secondary schools;
9. Broaden service and outreach nationally and internationally;
10. Maintain the movement.

ULSF (1990, p.1)

Australian Signatories to Talloires

- University of New South Wales
- Royal Melbourne Institute of Technology
- Australian National University
- Melbourne University
- University of Technology Sydney
- University of Canberra
- University of Sunshine Coast
- University of Western Sydney

made the distinction recognise that sustainability involves profound changes in core thinking, policies and practices. To achieve this, it is argued that, companies need transformational change. Evidence suggests that those organisations that adopt sustainability are accelerating this change by using organisational learning.

Organisational learning is based on the principles of adaptive management and uses those techniques within the workplace. It promotes exchange of information between employees hence creating a more knowledgeable workforce. This produces a very flexible organisation where people will accept and adapt new ideas and changes through a shared vision. It employs principles of learning for sustainability such as envisioning, systems and 'critical' thinking to create an atmosphere of team learning and develop shared visions and systems thinking.

It could be argued that, sustainability cannot be achieved without innovation and innovation is best achieved in a culture that embraces learning. The challenge for EE, if it is to fully contribute to business and industry sustainability, is to foster this organisational learning as well as providing opportunities for executives and the wider workforce to develop the necessary knowledge and skills.

The national review of experiences in Australia, documented in Volume 4, argued that to strengthen the contribution of learning for sustainability within the business and industry sector, there is a need to:

- provide opportunities to informally educate and engage senior executives in sustainability;
- educate and train managers and employees across the organisation to develop the necessary skills and knowledge in aspects of sustainability; and
- promote organisational learning in relation to sustainability issues.

iv) Further and Higher Education

Change towards sustainability in this sector requires more than just rethinking education plans or curricula. Ultimately, learning for sustainability has implications for the core of the institutional culture, influencing the decisions, management procedures and research actions of the further and higher education sector. The large scale changes required may explain the difficulties this sector faces to fully engage with sustainability. Instead, it has seen its contribution as mostly that of undertaking sustainability research for changing community thinking and practice rather than changing itself.

A handful of sustainability initiatives do currently exist within Australian further and higher education institutions but these tend to focus on single projects to address sustainability, as opposed to taking a more systemic view of learning and change across the institution. For education institutions to more deeply address sustainability there is a need to link campus management to research, curriculum and administrative practice, such that a learning for sustainability approach is embedded across every aspect of institutional operations in a synergistic way. For this to be possible the further and higher education sector needs to understand best practice in learning for sustainability. This will allow stakeholders to evaluate the effectiveness of existing programs and progress towards long-lasting change for sustainability. This knowledge could also be used in the design and delivery of future programs for the sector.

A growing number of education institutions have signed national and international sustainability declarations[159]. Many of these institutions struggle to fulfil their commitments through policies and implementation plans. The Talloires Declaration is perhaps the most supported by Australian Universities (see Box 1.71). It has been argued that while declarations are of some value in providing direction, they need to be accompanied by a process of institutional strengthening and professional development in order for their principles to be translated into practice[160].

Many training institutes, colleges and universities are currently approaching sustainability through campus greening (offering facilities and energy and water efficiency programs) and a few through integration of environmental knowledge into existing courses/training packages. Volume 5 of this series, which analyses practice within the sector, argues that while these efforts are a first step and should be applauded, institutions need to address the broader notions of learning for sustainability. For instance, internationally this sector is working towards sustainability not only across campus management and operations but also in policy, curriculum, teaching approaches and research activities. A holistic process of institutional learning for change is considered best practice. There is much to learn from overseas experience in this sector.

The sector is experiencing a drive towards a generic skills agenda which could act as a vehicle for engaging with sustainability across the disciplines and training packages. This agenda offers great potential for addressing 'critical' thinking skills, values clarification skills and stakeholder engagement skills, which are often associated with learning for sustainability and are not systematically addressed by current courses or programs.

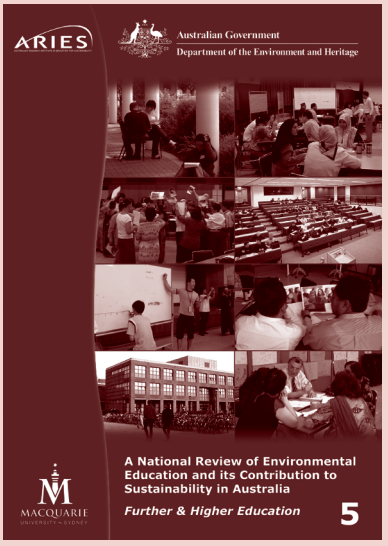
Recently, Technical and Further Education (TAFE) centres, colleges and some universities are increasingly recognising the need to engage industry and other external stakeholders in defining course outcomes or competencies so that these address relevant social needs. This dialogue needs to be strengthened through more formal partnerships as it has great potential to drive changes towards sustainability and to ensure education and training is more relevant – particularly to the needs of employers and the changing nature of work.

Further education is also increasingly focused on competency based training through national training packages. These training packages are created by course developers and not by those who teach these courses. In comparison, within universities, divisional committees approve the general aims, subject and generic outcomes of courses, but it is the teaching staff who pull the course together and who exercise a great deal of control over *what* and *how* students learn. These differences have implications for how we build capacity for sustainability across the sector. Strategies for curriculum change in further education must differ from those currently being piloted in higher education.

The education for the next generation of leaders and professionals represents a critical opportunity to address sustainability issues. The curriculum change needed to seize this opportunity requires staff training, the development of teaching and learning resources, and the revision of existing courses as well as the provision of new courses (see Box 1.72).

■ **Box 1.72**

For a more in-depth review of the contributions further and higher education in Australia to learning for sustainability see Volume 5 of this Series.



National Review of Environmental Education and its contributions to Sustainability in Australia: Further and Higher Education – Key Findings

'Understanding of the terms 'sustainability' and 'learning for sustainability' vary considerably across the further and higher education sector highlighting that these are new concepts and that there are no common agreed goals. It has been recognised that there is a need for critical reflection and discussion of the concept to develop shared understanding and consistent approaches across the further and higher education sector.'

Tilbury, D., Keogh, A., Leighton, A. and Kent, J. (2005b, p.2)

The national review of experiences in Australia, documented in Volume 5, argued that in order to enhance further and higher education's contribution to sustainability, EE initiatives will need to:

- establish whole of institutional approaches to learning based change for sustainability. This should include campus management, curriculum, research, outreach and operations through an organisational learning approach;
- build capacity of staff (academic and administrative as well as facilities management staff) in sustainability and learning for sustainability; and
- establish partnerships between institutions and with business government and nongovernment organisations to strengthen and share experiences in sustainability and learning for sustainability.

Australia is in a strong position to assist stakeholders to make the shift towards sustainability through education. There is increasing momentum across the sectors and government structures to support such initiatives. However, as the above summary has revealed, despite the range of efforts, there is a clear need to be more strategic if these are to have the desired impact.

1.5 Strategic Frameworks in Learning for Sustainability

i) Overview of Strategic Frameworks

Why is there a Need to be More Strategic?

Despite strategic efforts over the last 30 years EE initiatives across the world have often been described as well-intentioned but random efforts which have produced ad hoc results[161]. Few agencies or education providers seek to be synergistic or explore opportunities for building upon lessons learnt from existing or previous programs. This may result in a duplication of efforts and the loss of motivation for participants and educators alike. Often they operate independently of the systems they are trying to change and barely scratch the surface when it comes to effecting systemic change (see Box 1.73).

This ineffective and poor strategic use of EE could threaten its very existence as people begin to question the value and impact of this process and its contributions to sustainability.

How EE is used, and the role it plays in achieving environment and sustainability outcomes, often needs to be clarified to those who are not experienced or qualified in this area and who often interpret the process as mostly one of communicating information or key messages. Decision-makers often tag EE initiatives onto the final phase of programs as end-of-pipe communication tools. Educational approaches are not seen as being part of the main plan or strategy and thus fail to inform or influence the development of sustainability programs. Biodiversity and conservation programs have tended to be linear in nature, with the knowledge generated by conservation scientists being handed to the educator who then designs brochures, posters or events to communicate the information[162]. Generally this approach can have the effect of creating a more informed group of stakeholders but does little to effect change. For change to occur stakeholders need to be involved from the initial investigation process and their capacity for change needs to be developed[163].

Whilst an ad hoc approach to EE might contribute in some way to change, a more focused and structured approach will make greater contributions to environmental and sustainability outcomes (see Box 1.74). For this reason some countries have turned to using strategic frameworks in their strive towards sustainability.

What is a Strategic Framework?

A strategic framework is the representation of an organisation's, agency's, nation's or region's overall plan for the future. It is often a tool for consolidating ideas and communicating a rationale or vision for activities. Strategic frameworks can offer a basis for measuring, analyzing, and reporting the outcomes of efforts. There are a number of components which can contribute to, or independently support, a strategic framework including strategies, policies and action plans. In this volume we are particularly interested in the role

Box 1.73
A Dot-to-dot Masterpiece?

The Royal Society for the Protection of Birds has described efforts in education for sustainability in Schools in the UK:

'Our fear is that current practice is like expecting a dot-to-dot picture to yield a Rembrandt portrait'

House of Commons, Environmental Audit Committee (2005, para 75. p.30)

Box 1.74
Strategic Purpose

'How we get from… a state of poor Education for Sustainability to universal richness of thinking and practice is inevitably a question of strategy, as the ad hoc growth in incidence and quality of education for change that has taken place in the past will be too slow and ineffective for the future.'

Sterling (1996b, p.197)

Box 1.75
Clarifying terms:

Framework: a high-level structure which lays down a common purpose and direction for plans and programs.

Strategy: a long term plan with a defined scope that identifies: measurable objectives; key actors and target groups for the achievement of outcomes aligned with its declared vision.

Action Plan: a written plan of implementation often detailing the timelines, stages, roles and /or responsibilities of projects related to the strategy's objectives.

Box 1.76
Strategic Frameworks in Learning for Sustainability

Internationally, governments have responded in different ways to the challenge of adopting strategic frameworks in learning for sustainability:

a) Sustainability Strategies with a learning dimension
Some countries have incorporated an education and learning dimension into their national sustainability strategies. This approach had been adopted by countries such as New Zealand and Sweden.

- Education is identified as a key tool for changing how people engage with sustainability and as a driving force in Sustainable Development for New Zealand in its National Strategy 'Creating Our Future'.
- Education is identified as playing a prominent role in the Swedish National Strategy of Sustainable Development and is a theme in the main features of global policy, social development and security.

b) Learning for Sustainability Strategies
Other countries have developed independent education or learning for sustainability strategies or action plans. These are often separate from the national sustainability strategies (see appendices).

c) Learning as a theme in Sustainability and LfS Strategies
A handful of nations have attempted to synergise their learning for sustainability documents with existing sustainability policies and programs. Canada and The Netherlands are exemplary cases where this synergistic approach has been used.

- In Canada, after an extensive process of consultation and participation of over 5000 people, '*A Framework for Environmental Learning and Sustainability in Canada*' was developed. This document lay the foundations for the *Sustainable Development Strategy: 2004-2005* where education is identified as playing an important role.
- Education is seen as a key to change for the Netherlands. Its '*Learning for Sustainable Development 2004-07*' document promotes effective learning processes in order to enable judgements and choices in favour of sustainable development. This program has been incorporated into the National Action Program on Sustainable Development to ensure the learning process is more easily integrated with mainstream practices.

d) EE Strategies with a Sustainability focus
Around the world there have been numerous national strategies in EE that have addressed sustainability issues. This trend has been particularly prevalent in Latin America. Mexico, Ecuador, Costa Rica, Cuba, Argentina and Guatemala all providing examples of this approach.

of strategic frameworks in learning for sustainability (see Box 1.75 and 'Focus On: Contents of Strategic Frameworks in Learning for Sustainability' on page 76).

The key goal of a strategic framework in EE or learning for sustainability is to provide guidance on more effective use of education in achieving environmental and sustainability outcomes.

How have governments responded to this Need?

Government agencies have led the way in developing these frameworks not only to coordinate their own efforts and increase effectiveness but also to encourage others in NGO, business, formal education and communication sectors to align themselves with common goals for change towards sustainability. Over the years there have been two main pathways that nations have chosen in their efforts to mainstream the process of learning for sustainability across stakeholder efforts (see Box 1.76).

- **Sustainability Strategies with a learning dimension:**
  One approach many government agencies have adopted is to include an education and learning focus within their main strategies for sustainability. When incorporated in this way learning for sustainability is given recognition as an important tool for achieving sustainability goals. It exposes the process to a wider audience, going beyond the traditional educators, to those who previously may not have understood the value of learning based strategies for change in their work. Whilst this approach is good for advocating a position for learning for sustainability approaches there is a risk that, if not understood properly, education may be reduced to awareness raising in the implementation of the strategy. Thus a limitation of this approach is that it is seen as merely one of a myriad of 'tools' for sustainability, along with regulation and technological solutions, and the true benefits of learning as an agent of change may be lost.
- **Learning for Sustainability Strategies:**
  Other nations have developed independent, specific strategies focused on progressing learning for sustainability approaches across the sectors. Spain and Jamaica are two nations who have responded to the challenge in this way. In these cases the process of strategy development itself is treated as an important stakeholder education and engagement opportunity. Treating learning for sustainability itself as the starting point, these types of strategies provide a framework for policy development and planning that effectively engages multiple stakeholder groups both horizontally and vertically in the process[164]. An independent strategy allows for the identification of specific learning goals across the sectors which is not possible with a sustainability strategy. Strategic frameworks focusing on learning for sustainability can have a range of aims such as to create a 'business case' for learning for sustainability, raise the profile of this learning and change process, support those seeking funding for sustainability education programs and generally create a more coordinated effort on the ground. This type of strategy is generally directed at, and supported by educators already familiar with the dialogue but who require a structured framework to guide their current work. These include educators who need a specific learning for sustainability strategy to reorient their work in EE, along with

those who are already engaged in this area but who want to synergize their work and avoid duplication.

A specific learning for sustainability strategy can provide a vision and be the source of renewed motivation for those already engaged in EE but who have been struggling to deal with the complexities which sustainability brings. The strategy can also alert others who may not be familiar with education processes but are seeking ways of using them to achieve environmental and sustainability outcomes.

- **Combining the two pathways:** Countries with a strong history in sustainability have developed both types of strategic documents. The United Kingdom is an example where learning for change is promoted as a way of achieving sustainability within its main strategy. This is then supported by specific education and learning strategies to strengthen the process across all sectors (see 'Focus On: Learning for Sustainability: United Kingdom' on page 72). In comparison, those countries who have a strong EE tradition have redeveloped their EE frameworks to have a focus on learning for sustainability. Hungary, China and a number of Latin American nations have taken this alternative approach.

Who leads the development of national strategic frameworks in Learning for Sustainability?

The development of national strategic frameworks for learning for sustainability are generally the domain of government agencies with the process tending to be led by environmental agencies (e.g. DEH, Australian Government; Ministry for Environment Spain; Natural Resources Conservation Authority (NRCA), Jamaica), and less frequently by education agencies (e.g. DES, UK). In the case of regional strategies, international bodies (e.g. UNESCO, OECD, UNECE) lead the initiative and encourage national agencies and actors to adapt the frameworks to national priorities.

What has been the motivation for their development?

The driving force or motivation for an agency to develop a framework of this type is in direct response to either international pressure or national priorities (refer also to Section 1.1).

- **International Pressure:** The Canadian Environmental agency developed their learning for sustainability framework[165] as part of the lead up to the *World Summit on Sustainable Development* in Johannesburg, 2002. They effectively leveraged the energy and motivation that this international event created to focus attention on and support the efforts of education practitioners at home.

  The *United Nations Decade of Education for Sustainable Development (2005-2014)*[166], which was created as a result of intense lobbying at this Johannesburg Summit, has also stimulated action in this area. To support the implementation of the Decade in the Asia-Pacific region, UNESCO Asia and Pacific Regional Bureau for Education, with the support of Japanese Funds-in-Trust have recently developed an '*Asia-Pacific Regional Strategy for Education for Sustainable Development*'[167]. This strategy is an open document that is adaptable for revision to the changing needs of stakeholders throughout the Decade.
  The European Community has also responded to the challenge set by the Decade by drafting a strategy for education for sustainability.
  The United Nations Economic Commission for Europe has produced a framework strategy for regional implementation that will also be used as a foundation for their response to the Decade[168] (see also 'Focus On: The International Call for Strategic Frameworks' on page 68).

- **National Priorities:** Along with international pressure, strategic frameworks in learning for sustainability have also been created in response to specific outcomes required by national sustainability strategies. This was the case with the '*Learning to Last*'[169], a draft sustainable development education strategy for England. Although this was never formally adopted as a government strategy it did add to the pressure which ultimately led to the development of the '*Sustainable Development Action Plan for Education and Skills*'[170] by the UK Department of Education and Skills in 2003. These documents demonstrate the government's commitment to the Decade and were also influenced by the government's commitments to sustainability as outlined in the earlier UK Sustainable Development Strategy '*A Better Quality of Life*'[171]. This document recognised that all people, at home, in the work place and in the wider community make decisions that impact on sustainability indicators and will need to be engaged if they are to be addressed. It also acknowledged that this engagement will not be effective, or even possible, without education or learning[172].

The International Call for Strategic Frameworks

Global governance organisations, international development institutions and NGOs have played a significant part in demonstrating and communicating the urgent need for national learning for sustainability strategic frameworks. Groups such as the United Nations (UN) and the IUCN – the World Conservation Union have sought to encourage and equip nationstates to address learning for sustainability through the development of national strategies (see Box 1.77).

Box 1.77
Reorienting Education

'(UNESCO) calls on Governments at all levels, with the assistance and participation, as appropriate, of international organizations, the educational and scientific communities, non-governmental organizations and local authorities, to develop policies and strategies for reorienting education towards sustainable development, including roles and responsibilities of actors at the local, national and regional levels'.

UNESCO (2004, p.1)

The importance of education in the achievement of sustainability objectives was heavily emphasised throughout '*Agenda 21*', particularly in Chapter 36[173]. The Rio Earth Summit '*Agenda 21*' called for national education strategies to be prepared which would promote sustainability as a cross-cutting issue within education (see Box 1.78). Since then UNESCO has played one of the most pivotal roles in advocating for the development of national learning for sustainability strategies.

Box 1.78
Agenda 21

'Governments should strive to update or prepare strategies aimed at integrating environment and development as a crosscutting issue into education at all levels within the next three years. This should be done in cooperation with all sectors of society. The strategies should set out policies and activities, and identify needs, cost, means and schedules for their implementation, evaluation and review.'

UNCED (1992, p.1)

The Greek Government - UNESCO Conference at Thessaloniki in 1997 also called for national learning for sustainability strategies. It recognised that few sustainability issues had been effectively addressed since the Rio Earth Summit and that national strategies in learning for sustainability were a critical requirement for progress towards sustainability to be made (see Box 1.79).

Box 1.79
Planning Education for Sustainability

'Action plans for formal education for environment and sustainability with concrete targets and strategies for non-formal and informal education should be elaborated at national and local levels'.

UNESCO (1997, p.1)

This call for national strategies was again reiterated at the *World Summit for Sustainable Development (WSSD)* held in Johannesburg in 2002. The Summit recommended the development, implementation and monitoring of national action plans addressing education for sustainability (see Box 1.80). This is supported by the work of UNESCO, whose objective it is to encourage Agenda 21 signatories to review their policies and to incorporate learning for sustainability into national strategies and action plans for sustainability.

Most recently the UN is seeking to encourage nationstates to address learning for sustainability by making 2005 to 2014 the *Decade for Education for Sustainable Development*[174]. There is a recognition that the full potential of learning for sustainability has not been tapped and that this must be urgently addressed. International agencies such as IUCN are seeking, under the banner of the Decade, commitments from governments to develop national education for sustainability strategies (see Box 1.81).

In addition, the Organisation for Economic Co-operation and Development (OECD) also recognises that the pathway to sustainability requires not only a reorientation of education but of policy formation itself. This signifies that the traditional models of policy formation are in fact impediments to achieving sustainability and require a transformation process based on the principles of learning for sustainability. This will require significant re-learning, to move towards using more adaptive and negotiated processes that are reflective of the needs for sustainability (see Box 1.82).

Box 1.80
Action Plans

'122. Develop, implement, monitor and review education action plans and programmes at the national, sub-national and local levels, as appropriate, that reflect the Dakar Framework for Action on Education for All and that are relevant to local conditions and needs leading to the achievement of community development and make education for sustainable development a part of those plans.'

United Nations (2002c, p.61)

Box 1.81
Implementing Strategies

'As a matter of priority the UN Decade in Education for Sustainable Development should promote the development and implementation of national ESD strategies – or at least shared action plans – which provide strategic direction and support the efforts of all engaged in ESD'.

IUCN Commission in Education and Communication (2003, p.3)

Box 1.82
Being Strategic about Sustainability

According to the Organisation for Economic Co-operation and Development being strategic about sustainability implies a different approach to policy development:

- Move from developing a fixed plan towards operating an adaptive system that can continuously improve;
- From state responsibility for planning to society as a whole;
- From centralised and controlled decision-making to transparent negotiation and cooperation;
- From a focus on outputs to outcomes and impacts;
- From sectoral to integrated planning;
- To a planning process which accommodates monitoring, learning and improvement.

OECD (2001, p16)

ii) Review of Strategic Frameworks

While there are pockets of good practice, such as those mentioned previously, generally an ad hoc approach to the formulation of national learning for sustainability policies and action plans is common[175]. A contributing factor to this could be the lack of guidance available on what being strategic about learning for sustainability really means, why it is important and how strategies can be effectively developed and implemented[176].

The OECD[177] argues that the development of a universally applicable blueprint for national strategic frameworks would be counter-productive; however, a set of guidelines is useful in that it can inform future strategy development processes. The following section will review learning for sustainability strategic frameworks in order to assist with this task. It highlights key components, which underpin these documents as well as focuses on some national strategies as examples of good practice. These frameworks have been selected from around the globe on both national and regional scales.

The sophistication of learning for sustainability frameworks has progressed over the years with each successive document building on the lessons learnt from its predecessors. As one would expect, whilst there are many common features to national learning for sustainability strategies, due to their different contexts these documents naturally emphasise different issues and priorities for different sectors. For instance, the Uganda national strategy on education for sustainability focuses on community development, China's EE document focuses on conservation and Argentina emphasises learning for biodiversity[178]. However, it is possible to identify the common features and components across the range of strategic frameworks.

What are the Key Components Underpinning National Strategies?

A key component informing learning for sustainability strategies is the underlying intention which drives them. Those most closely aligned with learning for sustainability seek to develop not just an environmentally literate citizenry, but a society *capable of change* towards sustainability. Many learning for sustainability frameworks clearly articulate and support the concepts of:

- cross-sectoral involvement in education;
- opportunities so that people can learn in a variety of contexts and throughout their lives (the latter is often referred to as life-long learning);
- the development of change skills;
- the importance of participation at all levels; and
- learning for sustainability components such as futures thinking; partnerships; 'critical' and systemic thinking.

Appendices A-G provide a summary of how these key components have been understood and represented in practice.

Are there any examples of Best Practice?

Whilst there is no one national strategic framework that stands alone as best practice, it is interesting to focus on the experience of two leading nations:

- The **United Kingdom** has released a number of education strategic frameworks which are landmark documents and perhaps the most closely aligned to thinking and practice in learning for sustainability (see 'Focus On: Learning for Sustainability Strategies: The United Kingdom' on page 72).
- **The Netherlands** have taken a strategic three-pronged approach to learning for sustainability (learning individual, the learning organisation and the learning society). This reflects a deep understanding of the processes associated with change towards sustainability and a strong alignment with international thinking in learning for sustainability (see 'Focus On: Learning for Sustainability Strategies: The Netherlands' on page 77).

Overall it appears that the strategy documents from both these nations cover all the key issues and in a manner which reflects a learning for sustainability approach. At this point it should be noted that the production of a strategy by a government does not necessarily automatically equate with

real progress on the ground. It is too early to evaluate the impact of these, and the majority of the learning for sustainability strategies in place around the world, as they are relatively new. Whilst a detailed critical commentary on these strategies is outside the scope of this report we have attempted to review their contribution as it relates to sustainability thinking and practice.

A review of best practice in the development of strategic frameworks needs to look at how a learning for sustainability approach has been applied not only to the *content* of strategy documents but also in the actual *process* of strategy formulation. In order to highlight their individual importance this review has presented each of these areas separately in the following sections:

a) *What lessons can be learnt from the content of existing strategies?*

b) *What lessons can be learnt from the process of developing a strategic framework?*

a) What lessons can be learnt from the content of existing strategies?

Focusing on the international examples explored in the appendices A-G it has been possible to draw out specific lessons learnt about the content of learning for sustainability strategies to help us move forward in Australia. Also refer to 'Focus On: Contents of Strategic Frameworks in Learning for Sustainability' on page 76.

What needs to be included to maximise the acceptance and commitment to the strategy?

The strategic frameworks examined show ways in which strategy facilitators can address the issue of creating a high level of acceptance and commitment to the implementation, such as:

- Providing an **overall strategic vision** which motivates and inspires stakeholders to incorporate learning for sustainability into all education systems: formal; non-formal; and informal (see Box 1.83 and Appendix A).
- Including in the initial planning of the strategy a process of envisioning or futures thinking for stakeholders as this is a powerful tool which can be used to develop a shared understanding and increased commitment to implementing the strategy. A **collaboratively constructed vision** for learning for sustainability is seen to provide direction and motivation for coordinated and committed action.

Box 1.83
CANADA: Framework for Environmental Learning and Sustainability in Canada

One of the critical drivers behind the development of the '*Framework for Environmental Learning and Sustainability in Canada*'[187] was the need for a strategic vision to support the efforts of education practitioners and the need to empower those responsible for the implementation of that vision. The framework has provided a basis for local action plans and seeks to build the capacity of all learners and educators to achieve a sustainable future. Education practitioners in Canada called for a vision to guide their programs:
'We have many partners to help us implement our programs, but what we need is a strategic vision to support our efforts.' Christian Payeur, Centrale des Syndicats du Québec

Government of Canada (2000, p.7)

Box 1.84
NEW ZEALAND: 'See Change: Learning and education for sustainability'

This document is not a strategic framework but a discussion paper which has served to encourage debate about learning for sustainability reaching sectors which may not have seen the relevance of education and learning to the achievement of sustainability goals. It recognises and promotes systemic change as a goal of the strategy as well as a means of developing learning for sustainability approaches.

'Education for sustainability therefore needs to focus on both individual and systemic changes to resolve unsustainable practices. This will require a redesign of many systems that currently exist in societies. As a result, education for sustainability is often perceived as highly political. It aims to transform institutions in society that are promoting unsustainable practices, or holding back sustainable alternatives, so that people can work towards a better future.'

Parliamentary Commissioner for the Environment (2004, p.48)

Learning for Sustainability Strategies: The United Kingdom

The United Kingdom is perhaps the most experienced in:

a) integrating learning and education into main sustainability goals, and

b) learning for sustainability specific documents.

In March 2005 the UK Government launched its new strategy for sustainable development, '***Securing The Future***'[181]. This strategy takes into account domestic and international developments since the previous strategy which was released in 1999. These changes include the revised structure of government in the UK with devolution to Scotland, Wales and Northern Ireland and a greater emphasis on delivery at regional level. It also highlights the renewed international push for sustainable development from the *World Summit on Sustainable Development* in Johannesburg in 2002. The lead Department, DEFRA, chairs a Programme
Board to oversee delivery of the Strategy, but all UK Departments share responsibility for making sustainable development a reality. In this document the government recognises that whilst there will continue to be a very important role for regulation and enforcement, these alone will not be able to deliver the changes required. To address this, the new strategy focuses on the need to *enable, encourage* and *engage* people and communities in the move toward sustainability. Education is seen as having a major role in the achievement of this (see Box 1.85).

In addition to this recent strategy the UK Government has also released '***One Future: Different paths***'[182], which is a shared framework for sustainable development between England, Scotland, Wales and Northern Ireland. The framework document sets out their common challenges and goals, and is an affirmation that they will work towards these goals without compromising the strengths which their diversity of approach offers (see Box 1.86).

■ Box 1.85
Securing the Future

'Formal education has a crucial role to play in both raising awareness among young people of sustainable development, giving them the skills they need to put sustainable development into practice in later life; but also in forming good habits at an early age.'

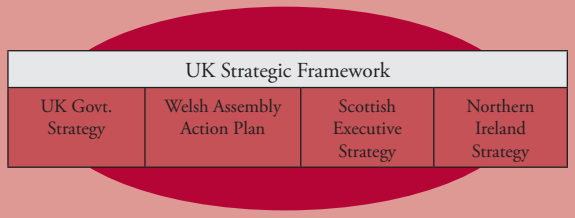
Department for Environment, Food and Rural Affairs, UK (2005b, p.37)

…Life-long sustainable development

'The good work started in schools needs to be continued on into higher education and professional development.…To maintain a more competitive economy, to compete internationally and build ourselves sustainable communities, we need to improve the knowledge and skills base of everyone, including professionals and others in the workplace.'

Department for Environment, Food and Rural Affairs, UK (2005b, p.38)

■ Box 1.86
One Future: Different Paths



'We recognise the significance of the sustainability issues created as a result of our current lifestyles and appreciate that it will require action by all of us to ensure that the resources we produce and consume and the manner in which we live reflect the principles of sustainable development. The framework provides an opportunity for leadership and co-operation across government with a focus for action on priority areas. In supporting this approach and in progressing a sustainable development strategy for Northern Ireland we will work closely with communities, the business sector and environmental groups to negate adverse impacts, encourage innovation and grasp the opportunities that can effect real change and safeguard the future."

The Rt Hon Paul Murphy MP, Secretary of State for Northern Ireland.

Department for Environment, Food and Rural Affairs, UK (2005a, p.4)

England, Scotland, Northern Ireland and Wales have released, or are planning to release, independent and differing documents focusing on learning for sustainability. Of these England has been the most active with the Sustainable Development Education Panel (SDEP)[183] developing a number of important documents over the years. The most influential of these being '***Learning to Last***'[184] which was a draft Sustainable Development Education Strategy released in 2003 (see Box 1.87).

One of the most recent strategic documents to be released by England is the '***Sustainable Development Action Plan for Education and Skills'*** [185] which was developed by the Department of Education and Skills. This replaces the documents prepared by the SDEP on an annual basis. This is an action plan which presents a new framework and goals for sustainable development (see Box 1.88). It focuses on the role of education for all in achieving sustainability (see Box 1.89).This action plan sits within the wider aspects of the UK Sustainable Development Strategy.

The plan is organised around four key objectives: education for sustainable development; the environmental impact of the Department and its partner bodies; the environmental impact of the education estate; and local and global partnership activity. Under each of these the plan identifies a number of issues to be addressed and then identifies specific actions (see Box 1.90).

Since the release of this plan, the Sustainable Development Commission led by Jonathan Porritt has broadened its scope to include education. The Commission is currently seeking a Sustainable Development Education Commissioner who will have the responsibility of formalising and implementing the education for sustainable development strategy in England.

Box 1.87
Learning to Last

The English Government established the Sustainable Development Education Panel (SDEP) in 1998 as an advisory body that would identify gaps, opportunities, priorities and partnerships for action in providing sustainability education[186]. The panel was a multi-stakeholder group from business, local government, education and NGO sectors responsible for drafting the national learning for sustainability strategy. Over 5 years the Panel's 21 members held 52 meetings, established sector-specific sub-groups that produced sector guides.

'Our final act… was to hand over our draft strategy for Education for Sustainable Development in England to Ministers. This forms the basis of possible consultation and subsequent adoption as government policy. We believe that this will be one of our most significant legacies. It is fitting that this took place just after the United Nations agreed a Decade of Education for Sustainable Development.'

Sustainable Development Education Panel (2003, p.8)

Box 1.88
Sustainable Development Action Plan for Education and Skills

In this document the Secretary of State for Education states:

'we have theorised about sustainable development in education for long enough. That is why this is not a strategy but a plan for action. We need to embrace sustainable development across the education system so that best practice becomes common practice. Not as a bureaucratic add-on but as an integral part of the skills development of this country and its economy.'

Department for Education and Skills, England (2003, p.3)

Box 1.89
Best Practice as Common Practice

'Sustainable development has implications throughout education in this country – for all people – of all ages… We need to embrace sustainable development across the education system so that best practice becomes common practice, not as a bureaucratic add-on but as an integral part of the skills development of this country and its economy'.

Department for Education and Skills, England (2003, p.3)

Box 1.90
Sustainable Development Action Plan for Education and Skills

The following is an example of the type of actions contained in the document:

'The Department will work closely with the National College of School Leadership to ensure that school leaders at all levels, and those being trained and prepared for leadership roles, are able to integrate sustainable development into all aspects of their leadership and management of schools.'

Department for Education and Skills, England (2003, p.7)

■ **Box 1.91**
THE NETHERLANDS: Learning for Sustainable Development: from Margin to the Mainstream

Education is a key factor for change. Therefore the Dutch program '*Learning for Sustainable Development 2004-07*' picks up precisely at this point. In lines with the goals of the UNECE strategy on ESD and the Decade for ESD, the national program creates effective learning processes in order to enable judgments and choices in favour of sustainable development. Learners at all levels will be encouraged to use systemic, critical and creative thinking and reflection in both local and global contexts.'

Ministerie van LNV, The Netherlands (2004, p.1-3)

■ **Box 1.92**
United Nations Economic Commission for Europe (UNECE)

The strategy's aim is to encourage UNECE member states to develop and incorporate learning for sustainability in the formal education sector, as well as non-formal and informal settings.

UNECE Strategy for Education for Sustainable Development

'30. It is important to support non-formal and informal ESD activities, since they are an essential complement to formal education, not least for adult learning. Non-formal ESD has a special role as it is often more learner-oriented, participatory and promotes lifelong learning. Informal learning in the workplace adds value for both employers and employees. Therefore, the cooperation among the different actors involved in all forms of ESD should be recognized and encouraged.'

UNECE (2005a, p.6)

- The strategic framework needs to include **input from across the sectors** to show support for the strategy, embrace the diversity of learning opportunities and encourage reluctant sectors to incorporate learning for sustainability approaches into their current practice (see Box 1.84 and Appendix D).
- The value of critical thinking needs to be highlighted within the strategy (refer to Appendix C). It is a process which challenges us to examine the way we interpret the world and how our knowledge and opinions are shaped by those around us. It has a significant role in helping to develop a deeper understanding of interests behind our communities and the influences of media and advertising in our lives. The Dutch program outlines that in order to achieve this **learners at all levels need to be encouraged to use systemic, critical and creative thinking and reflection** in both local and global contexts[188] (see Box 1.91).
- **Systemic thinking** should be be highlighted in the strategy as a better way to understand and manage complex situations (refer to Appendix B). It emphasises integrative approaches, which take into account the relationships between system components and works toward long-term solutions critical to addressing issues of sustainability. It is seen as offering an innovative approach to looking at the world and the issues of sustainability in a broader, interdisciplinary and more relational way.

What needs to be included to ensure learning for sustainability reaches the whole community?

It is important to recognise that there are a range of situations where the community is exposed to a learning experience beyond formal education, such as in the workplace, community groups, the home etc. By keeping a broad scope for the strategic framework it will be possible to involve people in learning for sustainability experiences regardless of their roles, levels, responsibilities or availability (refer to Appendix G).

- The strategy should encourage the incorporation of **learning for sustainability approaches in the non-formal and informal settings** as well as the traditional **formal education** sectors i.e. schools and further and higher institutions (see Box 1.92)

What should be included to ensure the approach is effective?

Since the majority of these frameworks have been introduced relatively recently, there is no documented evidence of their effectiveness. Thus this highlights the importance of monitoring and evaluation (refer to Appendix F). These are important both as components of all learning for sustainability *initiatives* as well as the *strategic frameworks* themselves. The strategic frameworks reviewed are currently wrestling with how to undertake the latter task. The development of indicators are seen as one way to monitor progress and evaluate effectiveness but these have not been utilised as yet (see Box 1.93).

- Effective **monitoring and evaluation** will require the identification of suitable, relevant and measurable indicators at every level – local, national, regional and international - for each initiative and program[189].
- Part of the action plan should include the capacity building of those involved in the design and delivery of learning for sustainability initiatives to be able to undertake some form of **self-evaluation**. This would reduce the time taken to react to gaps identified and increase the impact of these initiatives.
- From the outset the strategic framework should allow for the establishment of a specific **working group on indicators**.

The regional and national strategic frameworks reviewed also reflect the international partnerships agenda. Partnerships play a key role in the ability to develop and implement strategic frameworks. As UNECE advocates, partnerships will allow a faster transition from theory to practice, as the involvement of the private sector and industry in educational processes will help to address rapid technological development and changing working conditions[190].

- **Partnerships** need to be highlighted within the content of the framework to support their inclusion in all learning for sustainability initiatives (refer to Appendix E). Just as the issues of sustainability need to be viewed systemically, so too does the implementation of the solutions. The use of partnerships facilitates network-building and improves communication across multiple stakeholder groups and increases sustainability outcomes.

Box 1.93
ENGLAND: Environmental Education: Follow-up to Learning the Sustainability Lesson

Monitoring and evaluation of progress have been highlighted in England as an important part of a learning for sustainability approach but one which has been repeatedly neglected. In its review of the UK Sustainable Development Strategy the House of Commons Environmental Audit Committee felt that a very important addition which should be incorporated into the Strategy was the inclusion of ESD as a headline indicator[191]. The committee was particularly critical of the lack of progress made by DfES and DEFRA in developing ESD indicators since the first inquiry in 2003.

'It is unclear why there is a delay in the development of the ESD indicator, more than twelve months after we raised the issue with the Secretary of State in DfES. We are left to speculate on whether it is yet another example of the low priority afforded to ESD, or whether it is an indication that DEFRA and DfES simply don't know what to do with it. Whatever the reason for the delay, it is extremely disappointing and we would urge DEFRA and DfES to agree a suitable indicator as soon as possible.'

House of Commons Environmental Audit Committee (2005, p.44)

Contents of Strategic Frameworks in Learning for Sustainability

An analysis of several regional and national strategic frameworks in learning for sustainability has revealed that there are a number of common components that constitute these strategic frameworks. The key components listed below provide an overall guideline to inform future learning for sustainability strategy formulation. This analysis has also identified the typical content covered in learning for sustainability strategies and is presented in Box 1.94

A learning for sustainability approach: In most cases the components of learning for sustainability inform the development and content of the framework. Such components include the development of 'critical' and reflective thinking skills; systemic thinking skills; futures thinking; and the capacity building of action skills for sustainability.

Process Focus: Some strategies support partnerships, participation and capacity building and other learning for sustainability components as part of the process of developing the strategy as well as in the content (for further details refer to page 80).

Cross-sectoral: The strategies all identify and involve a broad range of stakeholders, key actors and target groups.

Reflects the Diversity: Most strategies take into consideration geographical and cultural trends in order to address diversity and national/regional priorities.

Co-ordination not duplication: The strategic frameworks seek to leverage upon the work of previous and existing initiatives. Support is sought to promote convergence between existing planning frameworks.

Structural support: In many cases the framework is supported and facilitated by government (through both policy and financial means) to provide the most effective results.

Timeframe: Many strategic frameworks are developed on timelines which allow for the development process as it provides an important learning opportunity in itself.

Box 1.94
Content Covered in National Learning for Sustainability Strategies

- **Why?**: Identifying the need addressed by the strategy;
- **Regulation:** Its governmental mandate and terms of reference;
- **Process:** Details of the process by which it was developed and how capacity was built for participation;
- **People:** The partners and participants engaged during the process;
- **Vision:** The development process and content of the framework is guided by a clear vision of learning for sustainability. This highlights what it looks like and what it can achieve for sustainability;
- **Scope:** Length and breadth of the strategy;
- **Objectives:** Clear and identifiable. These objectives are tangible, measurable, realistic and achievable. Alternatively the framework recommends the development of plans of implementation by specific sectors or regions;
- **Action Plan:** Detailing the strategy's implementation, although sometimes a separate outcome of the strategy's recommendations;
- **Responsibilities:** Outline of roles and responsibilities (usually part of the action plan);
- **Recommendations:** Highlighting the provision of financial, human and physical resources necessary for the implementation of the strategy;
- **Monitoring and Evaluation:** Mechanisms are identified and outlined by the framework to facilitate the easy monitoring and evaluation of progress towards the objectives.

Learning for Sustainability Strategies: The Netherlands

Focus On:

The Dutch Learning for Sustainability strategy divides its focus and commitments into three levels:

a) the learning individual;

b) the learning organisation; and

c) the learning society.

These three levels form the structure of the program. Each level is focused on specific target groups and situations.

Level 1: The learning individual Focus: ***formal education***

'Activities within this level are aimed at vision-development and agenda setting of sustainable development in the entire (formal) educational systems. This means primary and secondary school education, vocational and training and university education. The program also aims to engender teachers and other educators with the knowledge and competencies to deal with sustainable development inside and outside of the classroom. It also builds on numerous projects, pilots, materials and training that were developed in preceding programs on ESD and other educations as environmental education and development education.'

Level 2: The learning organisation Focus: ***government(s) and policy-making***

'The objective here is to implement more sustainable decisions, making sustainable development an integral part of governmental decision-making processes. In this focus-area, national, provincial and local governments learn how to deal with integral policy-making, the participation of citizens and organisations and how to improve the quality of their own structure and performances.'

Level 3: The learning society Focus: ***complex decision-making processes in society***

'Within this level, learning processes are connected to situations in which several stakeholders - with their own perspective - work towards a collective solution (for example in the development of an industrial area, or the planning of a community public area). In this way, so called 'learning arrangements' are created, allowing several stakeholders to contribute to and to learn from the decision-making process. In this, the role of the NGOs, businesses, civil society, are in the centre. Informal and non-formal education is important in this perspective, and social learning is the way to give structure.'

The Dutch national strategy 'Learning for Sustainable Development' is supported by a program which has been assigned by the Parliament of the Netherlands. A distinctive feature of these documents is that the responsibility is seen as inter-departmental and inter-governmental. The activities of the program which arose out of the strategy, will be developed by partnerships of governments (several ministries and departments - national, provincial and local) and stakeholders. Representatives of the Ministries and various governments form a Steering Committee which is responsible for overseeing the program's execution.

The key federal agencies involved in the initial strategy included:

- The Ministry of Agriculture, Nature Management and Food Quality
- The Ministry of Housing, Spatial Planning and the Environment
- The Ministry if Education, Culture and Science
- The Ministry of Transport, Public Works and Water Management
- The Netherlands Ministry of Foreign Affairs
- The Ministry for Economic Affairs
- The Dutch Provinces represented by the Association of the Provinces of The Netherlands
- The Dutch Water Boards represented by the Association of Water Boards

Ministerie van LNV, The Netherlands (2004, p.4-6)

Focus On:

Proposals and Actions contained in Learning for Sustainability Strategies: An Example

The Swedish Committee on Education for Sustainable Development calls for the following actions:

- Instructions to agencies in the field of education should be amended so that their activities promote education for sustainable development.
- Dialogue on education for sustainable development between stakeholders within, as well as outside, the field of education needs to be developed and deepened.
- Inquiries should be conducted to shed light on the importance of informal and non-formal learning for sustainable development.
- Public research funders should be asked to provide further support to interdisciplinary research, particularly on sustainable development and education for sustainable development.
- Basic training and in-service training for those engaged in teaching activities in the field of education should aim to strengthen knowledge of sustainable development and how education can promote sustainable development.
- The Education Act (1985) will be amended to specify that education will promote socially, economically and environmentally sustainable development. This means development to guarantee present and future generations a good environment, good health, economic and social welfare and justice.
- The Higher Education Act (1992) will be amended to specify that activities will promote socially, economically and environmentally sustainable development. This means development to guarantee present and future generations a good environment, good health, economic, social welfare and justice.
- The Decree on Government Subsidy for Liberal Adult Education (1991) will be clarified so as to ensure that activities promote socially, economically and environmentally sustainable development, which means that present and future generations are guaranteed a good environment, good health, economic and social welfare and justice.
- School curricula need to be reviewed so they provide better support for education for sustainable development.
- Appendix 2 to the Higher Education Ordinance (1993), the Degree Ordinance, should be reviewed with regard to sustainable development knowledge becoming a requirement for the issue of a degree certificate.
- The criteria for science centre grants should be reviewed so the centres are better able to support learning for sustainable development.
- UNESCO should be invited to establish an institute in Sweden to act as a node in an international network for education for sustainable development.
- A long-term strategy and action plan for work on education for sustainable development over the next ten years should be established.
- A pilot scheme should be established to provide opportunities for stakeholders in the school sector, the higher education sector and liberal adult education to produce methods to permeate the education system with a sustainable development perspective.
- The Government should consider whether there is a need to set up a special proactive coordinating body during the United Nations Decade of Education for Sustainable Development.

Adapted from the Swedish Committee on Education for Sustainable Development (2004)

b) What lessons can be learnt from the process of developing a Strategic Framework?

Experience is showing that the process of strategic framework development is as important as the content of the documents themselves[192] (see Box 1.95). When the characteristics of learning for sustainability are incorporated into the process of developing the strategy opportunities arise to increase stakeholders' understanding of sustainability and build capacity to enact change towards sustainability. Actively engaging multiple stakeholders in strategic framework formulation also ensures greater ownership and commitment to the strategy, particularly when the process involves not just consultation, but participatory decision-making. The result is that sustainability outcomes identified in the strategy are more likely to be realised.

A review of experience in strategic framework formulation for sustainability shows that successful approaches share the following characteristics[193]:

- multi-stakeholder involvement;
- transparency;
- participation;
- capacity building for decision-making;
- combination of top-down and bottom-up approaches; and
- a focus on facilitation rather than direction.

By adopting these characteristics, the strategic development process benefits from:

- a *shared vision* of a sustainable future is developed by all participants;
- greater *support and commitment* gained to achieve the shared vision;
- increased *understanding of sustainability*;
- generation of *dialogue for sustainability* between participants and the wider community;
- development of *new working relationships and partnerships* which will be required to implement the changes for sustainability; and
- *increased capacity* of participants to engage in the decision-making process and thus be effective agents of change for sustainability.

Achieving these can be a difficult task. One way of gaining a better understanding of what these characteristics mean and how they can be effectively utilised is through examining the experiences of others in developing strategic frameworks (see 'Focus On: Process of Developing Strategic Frameworks in Learning for Sustainability' on page 83). The following section reviews several of the main issues associated with developing strategies to highlight the various lessons that can be learnt from how they have been implemented.

Why involve stakeholders?

Stakeholders are those who are affected by an intended action or those who can affect the implementation of a plan, either positively or negatively. The process of creating a collective vision for sustainability requires the input of people from all walks of life. The achievement of that vision also requires the commitment and participation of the same variety of people. Thus multi-stakeholder participation refers to providing the opportunity for participation by all those people who have a part to play in achieving sustainability, those who will be affected by the planned changes or who can have

Box 1.95
The Importance of Process

'The emphasis… should be on process, on strategy and capacity building and on gaining a broader mandate, rather than exclusively on a product such as writing a strategy document.'

Sterling (1996b, p. 203)

a major influence on the outcomes. Providing a platform for multi-stakeholder participation is a critical factor in increasing the potential success of the strategy and final implementation of change for sustainability.

Without a diverse range of stakeholders participating in the strategic framework development process the final outcomes will be significantly limited. This has been highlighted in the case of Hungary, where the Hungarian Society for Environmental Education developed its national EE strategy subsequent to a national conference[196]. Although this was a transparent process, it is unclear to what extent the process involved the participation of decision-makers or stakeholders outside EE circles. The original intention of this document was to act as a catalyst for further discussion and implementation. Unfortunately the aims of this strategy have not been realised as this document lacks detailed action plans outlining roles and responsibilities which would support the achievement of this strategy. The process did not engage with a broad range of stakeholder groups during the strategy development, including governmental decision-makers, who still have not ratified the strategy[197] or actors who could take the responsibility for enacting the change.

How can we ensure the involvement of stakeholders?

The process by which the Western Australia government recently developed its state sustainability strategy '*Hope for the Future*'[198] represents good practice in multi-stakeholder dialogue and participatory planning that actively engages multiple stakeholders[199] (see Box 1.96). Although not specifically a learning for sustainability strategy it provides a good case study. Initially a consultation paper '*Focus on the Future*' was issued by the state government, inviting contributions from community groups, professional associations, the formal education sector, business and industry as well as local government and indigenous groups[200]. This was followed by meetings with key stakeholder groups with an objective of forming partnerships for the collaborative development of the strategy. In tandem with this, a series of public sustainability seminars and workshops was held to encourage dialogue on sustainability and build a broad base of public understanding for the issues involved.

The *Baltic 21 Education Program*, the Dutch '*Learning for Sustainability*' program and the Spanish National EE Strategy also provide lessons in how to include stakeholders from the grass roots level though to national agencies. These strategic frameworks articulated the importance of developing participation skills in decision-making as well as providing opportunities for cross-sectoral engagement through learning for sustainability initiatives. The participatory process is seen as important for the development of personal and institutional commitment to work together and with stakeholders from other sectors to address sustainability issues (refer to Appendix D). Lessons learnt from the review of strategies include:

- Multi-stakeholder involvement in the process is important as it allows a recognition of the value of local (or context-specific) knowledge. If included at the right level it can mean that local knowledge is part of the decision-making process, and weighed up with knowledge from other sources. Rather than being imposed by external experts, solutions can be developed which are relevant to each community[201]. However, this approach would not work unless it offered a **transparent process** which enabled stakeholders to know how and when to input into the process. Transparency is very important for gaining trust of the stakeholders which in turn results in meaningful participation.

- A strategic framework that involves **cross-sectoral involvement in its development** provides an important platform for stakeholder education in itself, and the development of the strategy should not be seen just as an obligation to deliver a document. This particpation builds a sense of ownership and provides the initial link to further engage stakeholder groups in dialogue and decision-making processes. The collaborative development of the strategy should involve ministries/agencies across the sectors. In the reviewed strategies this has been implemented in the form of a steering committee or a network. The responsibility of these groups is the facilitative development of the strategy - the creation of collaboratively negotiated documents.

- The role of this network/steering committee is principally to **encourage broader participation in the process at a local level**. This could be done either on a regional basis (i.e. states and territories) or through the establishment of working groups in each sector (community, school education, higher education etc.)

- The implementation of the strategy is essentially devolved to the regions or working groups. The network/ steering committee should also be responsible for the establishment of **mechanisms for monitoring and evaluation** of progress.

How can we equip stakeholders to make changes for sustainability?

There is a general consensus across the sustainability literature that the most effective strategies are those that involve capacity building for participation in strategy development[204]. In this way the very process of strategy development equips stakeholders with critical skills required for change towards sustainability such as participatory problem-solving and shared decision-making.

Capacity building for decision-making has the benefit of more deeply engaging individuals and groups in the process of change for sustainability (see Box 1.97). This approach embraces the concept of strategy formulation as a process of learning for sustainability. In this way, not only the content of the document, but the stages of its development are utilised as an opportunity to achieve sustainability outcomes. Through this the potential to integrate learning for sustainability into governmental decision-making is grasped and the nature of change towards sustainability as an ongoing learning process for is acknowledged. Some have said that the process *is* the strategy, whilst the document is only a tool. But commonly, its seen the other way round[205].

- The provision of **opportunities for participants to be involved in the decision-making process** is key to actively engaging stakeholders and ensuring the achievement of greater support and commitment for the strategy. Through participation, learners build skills to take control of both the decision-making process and responsibility for its outcomes. This greater control leads to greater motivation to participate in actions, whether they are community projects, political action, democratic decision-making or community leadership roles. By becoming competent in making choices, decisions and critical reflection, learners build life-long skills to both facilitate and participate in the process of working toward sustainability.

- For these processes to be effective the development of participation skills in decision-making need to be **focused initially on those involved in the design and facilitation** of the strategy development.

- Many of the strategic frameworks **incorporate elements of systemic thinking in their planning and approach** to change for sustainability as well as advocate it as a learning tool. The process of developing the strategy offers an opportunity to present these concepts in a practical manner. Hands-on experience of these approaches to education will provide practitioners and policy makers with a greater understanding of their benefits and build their capacity to use these techniques in their work.

- The strategy development process should **facilitate the development of stakeholder relationships**. It can catalyse partnerships that serve important purposes for the achievement of sustainability, both within and beyond the bounds of the strategy. Adopting an open participatory approach facilitates network-building and improves communication across multiple stakeholder groups[207]. This has been the case in the Netherlands where a national steering committee comprising of representatives from a range of government departments are responsible for the national learning for sustainability strategy[208].

What kind of Approach is best, Top-down or Bottom-up?

Stephen Sterling, a leading EE thinker, has distinguished between two approaches to learning for sustainability strategic framework development[209]. The first is top-down and tends to view education as a policy tool along with other instruments such as regulation and economic incentives. The approach provides a

Box 1.96
'Hope for the Future'[195]

WA's state sustainability strategy was released in 2003. It involved stakeholders in the following ways:

- Consultation paper released.
- Contributions and responses to the paper invited from all sectors.
- Key stakeholder group meetings with a view of forming partnerships for collaboration in the development of the strategy.
- Public sustainability seminars and workshops were held to encourage dialogue on sustainability.

Box 1.97
Synthesis of Process and Change

'People are engaged in all aspects simultaneously and there is no hard distinction made between making policy decisions and learning for change. The emphasis is on capability and confidencebuilding, participation, ownership empowerment and the generation of meaning (such as local sustainability indicators)'.

Sterling (1996b, p.200)

Box 1.98
The NETHERLANDS

The Dutch National Sustainability Strategy subtitled '*To Make Sustainability a Second Nature*' adopted the principles of participatory decision-making and as a policy was integrated both horizontally (across sectors) and vertically (combining a top-down and bottom-up approach). This collaboration resulted in broad consensus and commitment across stakeholder groups although there was some lack of clarity regarding outcomes as these were to evolve during the process.

The strategy formulation process involved seven ministries in analyzing the relevance of learning for sustainability to their own policies. This reflected a concern to integrate the work of government departments and involve them in the process. Bottom-up decision-making approaches were seen to be as important as top-down ones and therefore public participation was engaged through round-table discussions and other events designed to increase communication and consultation.

The Dutch have addressed the need for an integrated approach to strategy development, through which all government ministries collaborate to develop policies and programs addressing learning for sustainability. A national learning for sustainability steering committee is made up of representatives from every major government department and implementation of the strategy is devolved to provincial agencies[203]. This has the benefit of creating a broad sense of ownership for the strategy, not just in the sense that multiple stakeholders originate its content, but that it involves a process of shared understanding, commitment and participatory decision-making.

good opportunity to plan strategic and wide change across stakeholders particularly if it incorporates learning for sustainability components. However, in practice, the approach has sometimes been characterised by an instructive and information-led approach to EE, which sees society as a target audience whose 'behaviour' needs to be changed[210]. The fatal weakness of this approach is often that it lacks ownership amongst those it is meant to involve or galvanise[211].

The second approach outlined by Stephen Sterling treats policy as something that is shaped, owned and enacted by stakeholders[212]. Here, the role of government is that of facilitation with an emphasis on encouraging and supporting transparent, participatory multistakeholder processes supporting local identification of needs, interests and goals. This approach was implemented in the Scottish EE strategy development process, which sought to involve as many players as possible. Discussions, conferences and inter-sectoral workshops were all used as a means to actively engage a broad range of actors. This process generated dialogue, new working relationships and catalysed partnerships that extended beyond the strategy formulation process[213].

- Most national strategies involve a synergistic combination of both approaches that **maximises the strengths of both top-down and bottom-up strategy development processes**. The Netherlands' sustainability strategy provides an example of this type of approach. The Dutch government has addressed the need for an integrated approach to strategy development, through which all government ministries collaborate to develop policies and programs addressing learning for sustainability (see Box 1.98). This has the benefit of creating a broad sense of ownership for the strategy, not just in the sense that multiple stakeholders originate its content, but that it involves a process of shared understanding, commitment and participatory decision-making[214]. Furthermore, the strategy has the support of cross-government departments, who have taken the responsibility of overseeing the implementation of the strategy.

What is the main role of those coordinating the strategy?

The ability to implement multi-stakeholder participation and include capacity building for decision-making in the process of strategic framework development is dependent on the role played by the agency or group coordinating the strategy.

- The coordinators need to **build trust through transparency** but also provide genuine opportunities for input and learning. Experience suggests that when the coordinating agency or group facilitate rather than direct the process, better outcomes are achieved[215].

- On some occasions, the national agency responsible for developing the strategy may decide to **employ an independent facilitator** to plan and drive the strategy development process[216]. The facilitator is often well-respected across the stakeholder groups and perceived to be neutral - having no specific agenda. Sometimes, the national agency passes on the responsibility to a representative stakeholder group which drives and facilitates the process[217].

- The participatory process of developing a vision should be the focus of the early stages of strategy development. In many strategic frameworks this has been seen as critical as it encourages dialogue and collaboration which expedites the acceptance and implementation of strategy in later stages.

Process of Developing Strategic Frameworks in Learning for Sustainability

An analysis of several regional and national strategic frameworks in learning for sustainability has identified some common characteristics in the process of developing strategic frameworks:

Multi-stakeholder: The process actively engages multiple stakeholders from a wide range of areas and sectors of society. This includes sectors of society such as government and non-government organisations, business and industry and inclusive of gender and cultural diversity. It also includes participants from all levels of these sectors, such as those involved in formulating policy, those involved in planning and delivering education, environment and/or sustainability programs. The process specifically includes participation from the decision-makers who are in a position to support and implement the outcomes of the process.

Transparent: At all stages the process being used to develop the strategic framework is clearly articulated and open to public input.

Participation: The process is participatory in a sense which goes beyond pure consultation. This is where the action of participating has an impact on the final outcome of the process (also see section 1.3 and Box 1.99).

Capacity building for decision-making: Participation in the development process provides participants with opportunities to increase their knowledge, skills and ability to be involved in decision-making processes. The developers of the framework acknowledge that certain participants may require support to achieve this goal and this is planned for in the initial stages. Support may be provided through informal opportunities where participants further develop their understanding, learn how to influence decision-making and/or develop skills to participate effectively in change.

Combination top-down and bottom-up approaches: In acknowledgement of the strengths and weaknesses of each of these approaches the use of a combination of both approaches provides stronger outcomes. A top-down approach capitalises on the benefits of strong leadership support and commitment to the strategy. A bottom-up approach ensures that on-the-ground support for the strategy exists. This creates unified understandings and develops the partnerships which will be required to implement the actions for sustainability outlined in the strategic frameworks.

Facilitation: The main role for those who lead the development of the strategic framework is to be facilitators of the process. The focus is on providing the participants with encouragement, support and the structural base to ensure all of the above points can be achieved.

Box 1.99
Participation in Strategy Development

'Participation of multiple stakeholders at an early stage [of strategy development] increases the likelihood of policy or program success. Actively involving stakeholders from various levels, sectors and disciplines develops consensus among diverse and sometimes disparate interests'.

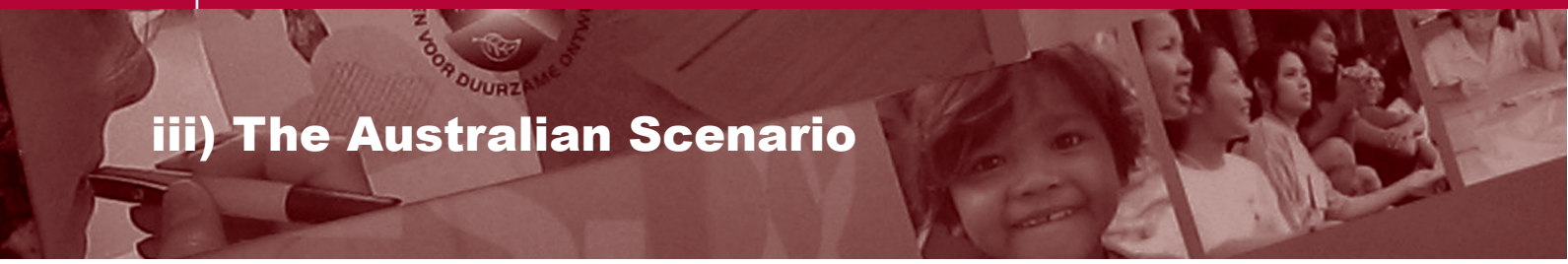
Scriabine & Day (2000, p.4)

'Sustainable development needs to involve the participation and engagement of the people, and of a wide range of civil society throughout Europe…. Stakeholders of all kinds should be consulted and involved in the implementation of a comprehensive strategy'.

European Environmental Advisory Councils (EEAC) Working Group Sustainable Development (2002, p.2)

'What matters is to have a locally appropriate and workable policy process and document that has evolved through broad participation and which enables people to attain or retain power over their own resources'.

SADC-ELMS (1999, p.9)



iii) The Australian Scenario

■ **Box 1.100**
National Ecological Sustainable Development Policy

The National Strategy for Ecologically Sustainable Development (NSESD) provides broad strategic directions and framework for governments to direct policy and decision-making. The Strategy facilitates a coordinated and cooperative approach to ecologically sustainable development (ESD) and encourages long-term benefits for Australia over short-term gains.

Throughout the policy there are repeated references to education and participation in its objectives:

i) Objective 32.1
- to develop a high level of community awareness and understanding of the goal, objectives and principles of this ESD Strategy.

ii) Objective 32.2
- to promote open and effective communication on ESD issues and policies between governments, industry, conservation groups, unions and community groups.

iii) Objective 32.3
- to ensure timely and informed contributions from stakeholders to the implementation of initiatives outlined in this Strategy and in its further development, monitoring and review.

Commonwealth of Australia (1992) Available at: http://www.deh.gov.au/esd/national/nsesd/strategy/index.html

Australia's response, to learning for sustainability at the national policy level, has mirrored a common approach adopted around the world. Initially, many nations envisaged a sustainability framework that incorporated notions of education and learning for sustainability as a strategic tool for meeting sustainability objectives would be the most appropriate response. As implementation of these frameworks began, the value and importance of education and learning was soon appreciated. As a result many nations have since developed specific learning for sustainability strategies to advance the process more rapidly and in a supported manner.

To examine the current status of learning for sustainability in Australia's strategic frameworks it is necessary to examine two different types of documents independently:

(a) Sustainability Frameworks; and

(b) Learning for Sustainability Frameworks.

a) Sustainability Frameworks

The Australian sustainability agenda is framed by the '*The National Strategy for Ecologically Sustainable Development' (NSESD)*[218]. This document addresses many key areas for action identified in '*Agenda 21*' and was adopted, in principle, by all levels of Australian government in 1992. Its intention was to provide broad strategic directions and a framework for governments to direct policy and decision-making.

Whilst this document does specifically mention the role of education and participation in its objectives (see Box 1.100) these are limited in that they are only referred to as processes of information and awareness raising rather than reflective learning and engagement. This interpretation of 'education' reflected the contemporary understanding of this term (see Section 1.1). Since its development in the early 1990s our perception of the role of education and learning in the process of sustainability has evolved. These days the focus is more on change strategies and capacity building[219].

The '*NSESD*' provided the framework for each state and territory to develop their individual and contextual response to this vision. It is therefore, not surprising to find this interpretation reflected in the strategies it was designed to guide. The most recent state sustainability strategies from Western Australia and Victoria reflect this more narrow view of the role of education.

Western Australia

The Western Australian strategy '*Hope for the Future*'[220] is a comprehensive and detailed sustainability plan. It acknowledges 'sustainability education' as one of the 'tools for sustainability'[221]. Although a description of this type of education is absent from the document, the language used to refer to education focuses on awareness raising and the need to modify behaviour (see Box 1.101).

Victoria

The Victorian strategy '*Our Environment, Our Future*'[222] sets clear directions in the areas of managing natural assets, improving resource use and reducing environmental impact. Whilst this framework is less detailed than that of Western Australia it does have objectives and targets, based on pre-existing agreements which have a heavy focus on technological advances and changes. The language of the framework indicates that to achieve these targets Victorians will need to think differently, design differently, plan and use resources differently although there is no indication of how these changes can be supported and actioned[223]. The only reference to this process of change can be found in page 28 of the document, where it recommends that people are provided with 'better information' so that they can make different decisions[224] (see Box 1.102).

The type of educational approach promoted in both the Western Australian and Victorian strategies, is based on the assumption that the provision of information will naturally lead to changes in organisational, workplace and lifestyle practice. However, this assumption has been shown to be incorrect[225]. These types of strategies take a simplistic 'awareness raising' view of EE where as a much more sophisticated approach is that of the Swedish national strategies which provides a capacity building and learning for change led view of EE[226].

b) Learning for Sustainability Strategies

In 2000, the Australian Government released the '*Environmental Education for a Sustainable Future: National Action Plan*'[227]. This action plan has been the catalyst for strategic national initiatives which have included the formation of the National Environmental Education Council (NEEC), the establishment of the Australian Research Institute in Education for Sustainability (ARIES) and the most recent development of the '*The National Statement for Environmental Education*' (NEES)[228] (see section 1.4 for a detailed review).

Since the release of this action plan, the states of New South Wales and Victoria have recognised the need to develop specific learning for sustainability strategies and/or plans that reflect their local contexts and needs.

New South Wales

'*Learning for Sustainability*'[229] was the first three-year EE strategy adopted in NSW. The main aim of the document was to build the capacity of the whole community to be engaged in making environmental improvements and living sustainably. The strategy also identified specific roles and actions for stakeholders to achieve its outcomes (see Box 1.103). It adopts and promotes most of the key components associated with learning for sustainability. Currently this strategy is being reviewed and a 2006-2009 plan is expected to be released in late 2005.

Victoria

The Victorian Government Department of Sustainability and Environment (DSE) has commenced the development of a strategy for '*Sustainability Education and Behaviour Change*' as a key element of Victoria's overall approach to sustainability. There are plans for the draft document

Box 1.101
Hope for the Future

WA's state sustainability strategy advocates for innovation in its approach to sustainability and supports pilot projects prior to their broader application or support by policies and legislation. The strategy encourages programs and tools such as: ecological economics; ecological footprint; eco-efficiency; industrial ecology and waste minimisation; The Natural Step; facilitating sustainable technology options; regulation, enforcement and opportunity; sustainability checklists; community development processes; artistic innovation; scenario planning; community visioning and research, innovation and demonstration.

In reference to education, it recommends that sustainability education (formal and informal) provides 'training and accreditation of all professional activity that recognises and increases awareness of sustainability principles and how they can be applied in daily life.'

Government of Western Australia (2003, p. 35)

Box 1.102
Our Environment, Our Future

This framework sets out the challenge ahead for Victoria to become a world leader in sustainability. It provides directions for government, business and the community to build environmental considerations into the way they work and live.

It suggests that in order to reduce their everyday environmental impacts, Victorians need a different kind of information:

'To help people make better choices they need better information about the environmental impact their decisions ultimately produce.'

Government of Victoria (2005, p. 28)

■ Box 1.103 Learning for Sustainability

This plan was developed through wide consultation and involvement by the NSW EE community. This process included an extensive review of EE, expert contributions from members of the NSW Council on Environmental Education and inputs from stakeholders. The *Environmental Education Plan 2002–05* is founded on a vision to achieve:

'Effective and integrated environmental education which builds the capacity of the people of NSW to be informed and active participants in moving society towards sustainability.'

NSW Government (2002, p.8)

The Plan identifies roles for all stakeholders in achieving its outcomes. Possible actions in response to the Plan include EE in corporate policies and work practices, improving program planning and delivery, building knowledge of environmental education and contributing to specific NSW high priority actions identified in the Plan.

During 2005, the Council will be reviewing and updating the Plan for 2006-09. A public consultation process was held earlier this year and the NSW Council on Environmental Education is currently addressing the wide range of submissions received. A draft of the updated Plan will be available for public comment towards the end of 2005.

NSW Government (2005b)
Available at:
http://www.epa.nsw.gov.au/cee/lfs.htm

■ Box 1.104 Learning to Live Sustainably

The Victorian strategy, '*Learning to Live Sustainably*', currently being drafted, will focus on 'sustainability education and behaviour change'. The document is expected to be released for consultation in 2005.

DSE has adopted the following as guiding points for the development of the strategy:

The Strategy should:

- be for the whole community;
- embrace all the different ways in which people learn and change;
- address the need for community-wide rethinking, innovation and change;
- develop not only knowledge and awareness but also values, attitudes, skills and the involvement and empowerment of individuals and groups; and
- be for change toward environmental sustainability in the holistic sense.

VAEE (2005)

to be released for consultation late in 2005. Significantly, the DSE has recognised, that the strategy will need to not only address the development of knowledge and awareness but also values, attitudes, skills as well as the empowerment of individuals and groups to participate in change for sustainability[230] (see Box 1.104).

Western Australia

WA's Department of Environment released an '*Environmental Education Strategy and Action Plan*' in December 2004. The document has a clear sustainability mandate but not a strong learning for sustainability focus. The Strategy is consistent with WA's sustainability strategy and has led to the formation of an EE Advisory Committee which coordinates the implementation of the strategy and provides specific advice to government on EE resource allocation, priorities and research issues.

The strategy provides a very clear framework on how to be more strategic and seek more effective delivery and better coordination of EE initiatives. It recognises that there are unnecessary overlaps and large gaps which could be avoided.

The focus, however, is on 'raising awareness and encouraging responsible environmental behaviour' rather than on capacity building or the use of learning based strategies for change. It supports traditional models of EE, interpreting the outcomes of EE as:

a) exposure to messages;

b) retention of messages;

c) understanding of messages;

d) attitudinal change; and

e) behaviour change.

The strategy does not provide advice on how EE is challenged by the learning for sustainability agenda or guidance on how to use education to achieve sustainability outcomes.

Despite this, the EE Advisory Committee has used the document as a springboard in an attempt to focus on capacity building across the entire community (see Box 1.105). The sectors targeted include industry and commerce, formal education (including TAFE and higher education), government agencies, natural resource management and the general community.

The Need for a Strategic Framework to Guide EE Policy and Practice in Australia

Overall there has been a perception that approaches to planning and implementing EE in Australia have suffered from the lack of an overarching framework to co-ordinate efforts[231]. Some programs have been conducted in a non-integrated and insular fashion, which has led to duplication of effort, and in the worst cases have confused and de-motivated audiences[232].

The Victorian Association of Environmental Education undertook an evaluation of the implementation of EE and what it refers to as 'sustainability education' strategies in Victoria[233]. This report found that there is no common view about the state of sustainability education in Victoria. Leading practitioners contacted for the evaluation believed several goals had been achieved in, and through, learning for sustainability, although these changes were seen as 'patchy'. The lack of a common strategic vision for learning for sustainability in the state may help explain this result. The report identified that there are many uncoordinated efforts and a lack of strong leadership or commonly agreed goals.

The requirement for long-term strategic planning for Australia's future has also recently been highlighted by the publication of '*Imagining Australia*'[234]. This far-sighted and spirited book was jointly written by four young Australians: Macgregor Duncan, Andrew Leigh, David Madden and Peter Tynan. As a reaction to the lack of vision and leadership in Australian politics these authors have offered a constructive alternative of their own. The book creates a vision for Australia which makes an excellent starting point for a new debate about where our country is heading and what sort of society we are becoming[235].

These issues indicate that in Australia it is no longer adequate to merely call for 'more and better'[236] Environmental Education. What is required is a strategic and integrated approach that provides a consistent sense of direction and leverages skills and resources[237]. A national learning for sustainability strategic framework would address that need by mapping out a vision and providing a coordinated framework for coherent action plans (see 'Focus On: Lessons for Australia' on page 88). It would assist in identifying gaps in practice; avoid duplication of efforts; learn from experience and strategically align initiatives so that they contribute to similar goals.

Box 1.105 The Western Australian Environmental Education Advisory Committee

In response to the issues identified by the '*Environmental Education Strategy and Action Plan*' the EE Advisory Committee released an audit of all EE programs in Western Australia in July 2005. This provides as a way of identifying potential partnerships and linkages, as well current gaps in the provision of EE.

The EE Advisory Committee is currently developing a comprehensive behaviour change matrix across all sectors outlined above. The framework focuses on capacity building around education for sustainability and involves the following dimensions for building this capacity:

- leadership and responsibility
- barriers and benefits
- behaviour changes sought and change agents
- scope of behaviour change sought
- measures to be applied
- the EE strategy and action plan issues addressed
- support resources available (including capacity building)
- the gaps, needs, resources still required
- policy and regulatory implications
- research and evaluation

A series of forums which bring together industry, government, community leaders and EE practitioners are being conducted throughout 2005. One of the outcomes of these forums is best practice case studies in EE for sustainability.

Hodge (2005)

Focus On:

Lessons for Australia

A proposed vision for effective learning for sustainability in Australia would be a nation where learning and education are viewed as a prerequisite in achieving sustainability. Learning for sustainability is considered an essential tool for good governance, informed decision-making and the promotion of democracy. In order to achieve this vision it is necessary to develop a national learning for sustainability strategic framework which incorporates the lessons learnt from strategic frameworks both in Australia and across the globe, which include:

- The importance of **recognising and building on the existing work in the area** initiated by the Australian National Action Plan, as well as by the experience of the States and Territories in implementing frameworks in this area.
- As an example and role model to all the sectors, a first step is to ensure **endorsement and commitment by the whole of government** to the development and implementation of the strategy.
- The role of the coordinating agency or group is to **facilitate the process** rather than to direct the process. Option to have an independent facilitator or representative stakeholder group to drive the process.
- The strategic framework should provide an overall vision which creates the motivation and inspiration for all stakeholders to incorporate learning for sustainability into **all education systems: formal; non-formal; and informal.**
- During both the strategy development and implementation stages **target key multipliers to spread and maximise the impact.**
- Focus on developing a process which encourages and allows participants to **build partnerships and strategic alliances.**
- The strategic framework needs to include **cross-sectoral participation** to show support for the strategy, embrace the diversity of learning opportunities, to encourage and build the capacity of reluctant sectors to incorporate learning for sustainability approaches into their current practice.
- Outline why and how **learners at all levels need to be encouraged to use systemic, and creative thinking as well as critical reflection** in both local and global contexts.
- Providing **opportunities for participants to be involved in the decision-making process** is key to actively engaging stakeholders and ensuring the achievement of greater support and commitment for the strategy.
- Support the development of **systems to monitor and evaluate the effectiveness** of both learning for sustainability initiatives as well as the strategic framework.

1.6 Summary of Needs and Recommendations

In response to international calls for improvement to quality of life associated with ecological protection, social justice and economic equity, thousands of sustainability initiatives have emerged across the globe since the mid-1980s. Despite this increased activity, many experts have pointed out that there is little evidence of positive achievement and progress has been modest measured against trends of unsustainability.

An increasing number of regional and national sustainability strategies are emerging as the need to focus, coordinate and direct energies towards specific goals is recognised. However, the profile of education and learning for sustainability has remained low within national sustainability frameworks.

In Australia the incorporation of learning sustainability concepts into policy and strategy formation has been slowly following international trends and approaches. This volume provides the conceptual context for understanding Environmental Education's contribution to sustainability. It attempts to define the components of learning for sustainability and identify the rationale and practice of these components which have the potential to transform how people think and act. Through a review of international and national frameworks which have sought to implement this approach, it provides analysis as well as recommendations to improve strategic planning and actions for sustainability through Environmental Education in Australia.

This volume forms part of a series, prepared by the Australian Research Institute in Education for Sustainability (ARIES) for the Australian Government Department of the Environment and Heritage. The accompanying volumes provide a review of existing trends, and programs which will assist in identifying gaps to be addressed by strategic frameworks.

Over the last few decades the international community has come to recognise that sustainability is essentially an ongoing learning process that actively involves multiple stakeholders in change across every aspect of society. Given this *learning* and *change* focus there has been an international call for the development of learning for sustainability strategic frameworks. Groups such as the United Nations (UN) and the World Conservation Union (IUCN) have played the most pivotal roles in advocating, encouraging and equipping nation-states to address learning for sustainability through the development of national strategies.

In response, many governments have led the way in developing these frameworks not only to coordinate their own efforts and increase effectiveness but also to encourage others in NGO, business, formal education and communication sectors to align themselves with common goals for change towards sustainability. However, these national education and learning for sustainability plans are often not aligned with the national sustainability strategies. They offer a framework for thinking about capacity building and learning based change for sustainability but few include targets, timeframes or reporting structures. Environmental Education strategies with a focus on sustainability also exist, but many have failed to make the transition between the old models of education, based on awareness raising, transmission of key messages and behavior change goals and the new model based upon a capacity building and learning based change focus.

Most learning for sustainability frameworks have been guided by a national vision for sustainability which has driven some communities and stakeholders to work towards sustainability. In Australia the closest we have come to a national vision for sustainability is the '*National Strategy for Ecological Sustainable Development*' developed in 1992 and endorsed by the Council of Australian Governments. However, the *National Strategy* has not been as influential as anticipated, as critics point out, it did 'not tell us what we have to do to achieve ecological sustainability.'

In 2000, the Australian Government released the '*Environmental Education for a Sustainable Future: National Action Plan*'. The Government's commitment to implementing this action plan has resulted in a number of initiatives which are well positioned to influence EE practice in Australia which is still struggling to embrace learning for sustainability. The establishment of the National Environmental Education Council, the National Environmental Education Network, the Australian Research Institute in Education for Sustainability and the release of the National Environmental Education Statement for Schools provide a sound basis for strategic development of EE for sustainability in Australia. However, as international experience has shown, maintaining existing structures will not be enough to address the new approaches to Environmental Education prompted by the sustainability agenda.

Focus On:

A Vision of Learning for Sustainability in Australia

A proposed vision for effective learning for sustainability in Australia would be a nation where learning and education are viewed as prerequisites in achieving sustainability. Learning for sustainability is considered an essential tool for good governance, informed decision-making and the promotion of democracy. Learning for sustainability is supported and implemented in government, schools, further and higher education, business and industry as well as community education programs. It strengthens the capacity of individuals and organisations to make judgements and choices in favour of sustainability. The development of skills in critical and reflective thinking are promoted as they allow people to create alternative mindsets. As a result, new visions and concepts are explored and new approaches developed and implemented which which improve quality of life.

In order to achieve this overall vision each sector has its own set of goals which have been identified as a result of the needs highlighted in the five volumes which make up this series. A proposed vision, in line with learning for sustainability for each sector, is outlined below.

Government

- A national learning for sustainability strategy for Australia guides all efforts within and across sectors through its vision and action plan.
- Strategic frameworks for each state and territory have been developed and are aligned to the national strategy so that all actions are congruent and working towards the same overarching goals.
- Strategic networks within the sectors are supported so that goals identified by strategic frameworks can be effectively implemented.

Further and Higher Education

- Whole of institution approaches to learning based change for sustainability have been established within the areas of campus management, curriculum, research, outreach and operations.
- Academic, administrative and facilities management staff have been exposed to education and training in sustainability and learning for sustainability.
- Partnerships between institutions and with business, government and non-government organisations have been established which allow the strengthening and sharing of experiences in sustainability and learning for sustainability

School based Environmental Education

- All educators (including early childhood educators) have been exposed to learning for sustainability approaches either through their training or school experience.
- Whole-school approaches to learning for sustainability are the norm, where they consider the management, curriculum, pedagogical approaches and infrastructure of the school.
- Strategic networks exist between educators, teacher educators and the schools communities to work towards change for sustainability.

Environmental Education initiatives in Business and Industry

- Opportunities exist to both formally and informally educate and engage senior executives in sustainability.
- Managers and employees across the organisation have been exposed to education and training programs to develop the necessary skills and knowledge in aspects of sustainability.
- Organisational learning is promoted and supported as the pathway for bussiness and industry to address sustainability issues.

Community based Environmental Education

- Community based educators are equiped with the skills to include learning for sustainability approaches in their programs.
- Incentives and support exist to facilitate the inclusion of education and learning in community environmental and sustainability programs.
- Strategic networks and partnership have been developed between government, community groups and citizens for more coherent and consistent education actions for sustainability.

A strategic, integrated approach that provides a consistent sense of direction and leverages skills and resources is required. A national learning for sustainability strategic framework would address that need by mapping out a vision and providing a coordinated framework for consistent and coherent action plans. It would assist in identifying gaps in practice; avoid duplication of efforts; learn from experience and strategically align initiatives so that they contribute to common goals.

Recommendations

The research undertaken by ARIES has revealed a number of key needs with respect to strategic frameworks in learning for sustainability. The following recommendations have been derived from these key needs. The recommendations identify practical steps at a policy, practice and research level that could strengthen the contribution of EE towards sustainability within Australia. It is recommended that the federal government undertake the following actions.

Policy:

1. Prepare a brief National Statement which highlights the learning for sustainability approach and its implications for strategic planning and practice. To be aligned with good practice, learning for sustainability strategies need to be based on capacity building and learning based change rather than awareness raising, transmission of key messages or behaviour change models. The statement should be developed in the preliminary stages of strategy development as it would be used as an overarching document to inform the development of the strategies and action plans at the various levels.

2. Use the National Statement (see recommendation 1) as the basis for developing whole-of-government understanding and endorsement of learning for sustainability approaches.

3. Facilitate the development of a Learning for Sustainability Strategy for Australia. The strategy needs to provide: a vision for how education can contribute to change for sustainability; guidance on what constitutes effective practice; as well as outline actions, timelines and responsibilities for implementing this vision.

4. Provide incentives (e.g. funding) and support (via collaborative workshops) to the States and Territories which are yet to develop a learning for sustainability framework and/or action plan. A similar approach to that used in the Australian Sustainable Schools Initiatives is advocated.

5. Provide incentives (e.g. collaborative research support) to the States which have developed learning for sustainability frameworks and/or action plans to encourage their close monitoring and evaluation. This can provide a valuable learning and capacity building experience which could influence the revision of such frameworks and alignment with the national learning for sustainability strategy.

Practice:

6. Provide opportunities through roundtable discussions and participatory seminars to develop a national learning for sustainability strategy in a way that involves a broad range of sectors, so that the value of learning in achieving sustainability goals is recognised by others who are not in the field of education. If effectively facilitated, informal learning and networking opportunities would arise out of these exchanges.

7. Provide opportunities to involve State and Territories government agencies from around the country in the development of the strategic plan. This could be achieved through facilitated forums and participatory workshops which include opportunities for informal learning and networking.

8. Fund a networking and mentoring program in learning for sustainability programs for government departments at the federal level. This will enable a whole-of-government approach, maximise cooperation and enhance the delivery and value of the learning for sustainability strategy in Australia. This would be framed and guided by the 'Building Government Capacity Towards Sustainability' project currently being undertaken by ARIES.

Research:

9. Undertake a needs analysis based on the findings and recommendations identified in volumes 2-5 of this series. This research would be used to inform the development of the strategy.

10. Fund an action research approach to strategy development and implementation of the national learning for sustainability strategy for Australia. This approach would enable learning from the experience as well as more effective implementation of the strategy.

11. Commission a review to document the experiences of developing the existing state learning for sustainability strategies (e.g. NSW and WA) in support of recommendation 3. This review should identify lessons learnt from these processes and also identify ways to use and build on the partnerships and initiatives that currently exist.

Endnotes

[1] Hopkins and McKeown (2002)
[2] The Convention on Biological Diversity was signed in 1992 at the Rio Earth Summit and is dedicated to promoting sustainable development by emphasing that biological diversity is more than just plants, animals and ecosystems. See also: http://www.biodiv.org/
[3] The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. See also: http://www.ramsar.org/
[4] At the United Nations Conference on Environment and Development, which was held in Rio de Janeiro in 1992, most countries joined the United Nations Framework Convention on Climate Change which was an international treaty. In 1997 governments agreed to an addition to the treaty, called the Kyoto Protocol, which has more powerful (and legally binding) measures. The Protocol entered into force on February 16, 2005. See also: http://unfccc.int
[5] In 1977, the United Nations Conference on Desertification adopted a Plan of Action to Combat Desertification. At the United Nations Conference on Environment and Development, which was held in Rio de Janeiro in 1992 a new, integrated approach to the problem was supported. This approach emphasised action to promote sustainable development at the community level. This led to the development of the Convention to Combat Desertification which was adopted in Paris on 17 June 1994. See also: http://www.unccd.int/
[6] The Aarhus Convention was adopted in 1998 at the Fourth Ministerial Conference in the 'Environment for Europe' Process. This Convention emphasises access to information, public participation in decision-making matters and access to justice in environmental matters. It links environmental and human rights, government accountability and environmental protection and focuses on the interactions between the public and public authorities. See also: http://www.unece.org/env/pp/
[7] United Nations Conference on Environment and Development (1992). See also glossary.
[8] See glossary.
[9] The UN Millennium Development Goals are a series of eight goals to achieve sustainable development, that all 191 UN Member States have pledged to meet by the year 2015. See also: http://www.un.org/millenniumgoals/
[10] Cooke and Tilbury (2004)
[11] See glossary for LA21 as well as refer to Volume 3 of this series.
[12] Vision 20:20 is a process which engages the community in envisioning a sustainable future and mapping out an action plan to achieve it.
[13] See glossary as well as Volume 4 of this series.
[14] See glossary as well as Volume 4 of this series.
[15] See Section 1.4 of this document.
[16] University Leaders for a Sustainable Future (1990). See also Volume 5 of this series.
[17] Copernicus (1994). See also Volume 5 of this series.
[18] In this volume and others in this series, we refer to the term 'sustainability'. It interprets it as synonymous with 'sustainable development'.
[19] IUCN, UNEP WWF (1991); Parliamentary Commissioner for the Environment, NZ (2004); Sustainable Development Education Panel (2003); DEFRA (2004); Hesselink et al (2000)
[20] IUCN, UNEP and WWF (1980)
[21] World Commission on Environment and Development (1987)
[22] Fein (2002)
[23] United Nations Conference on Environment and Development (1992). See also Glossary.
[24] United Nations (2002)
[25] United Nations Conference on Environment and Development (1992), United Nations (2002)
[26] See Focus On: A Shift in Thinking (p. 5).
[27] UNESCO (2002)
[28] Fien and Tilbury (2002)
[29] For examples see: http://www.sustainablemeasures.com/Sustainability/index.html, http://www.sustreport.org/issues/sust_comm.html and Bhandari and Abe (2003, p.16).
[30] IUCN, UNEP WWF (1991); Capra (1996); Sterling (2004)
[31] Carl Pope, executive director of the Sierra Club as quoted in Griscome Little (2005)
[32] Dan Carol, board member of the Apollo Alliance as quoted in Griscome Little (2005)
[33] Keith Wheeler 'New Learning for Sustainable Solutions' presentation to the IUCN CEC Steering Committee February 2005
[34] Shellenberger and Nordhaus (2004)
[35] Shellenberger and Nordhaus (2004, p.7)
[36] Parliamentary Commissioner for the Environment, NZ (2004, p.38)
[37] Government of Western Australia (2003)
[38] NSW Government (2004)
[39] Government of Victoria (2005)
[40] Commonwealth of Australia (1992)
[41] Yenken and Wilkinson (2001, p.320)
[42] Prescott-Allen (2001, p.2)
[43] UNESCO (2002); Fien (1993a); Huckle and Sterling (1996); Thomas Jefferson Sustainability Council available at: http://avenue.org/Gov/TJPDC/sustain.html [Accessed January 22, 2005]
[44] UNESCO (2002)
[45] See glossary and Volume 4 of this series for further discussion on the concept of a 'learning organisation'.
[46] UNESCO-UNEP (1996)
[47] UNESCO/UNEP (1996. p.2-3)
[48] IUCN CEC (2004); Fien and Tilbury (2002)
[49] Cooke and Tilbury (2004)
[50] Cooke and Tilbury (2004)
[51] Doppelt (2003)
[52] Parliamentary Commissioner for the Environment, NZ (2004 p.13)
[53] Sterling (2001)
[54] See section 1.5 of this Volume
[55] UNESCO (2004)
[56] UNESCO (2004)
[57] UNESCO Asia and Pacific Regional Bureau for Education (2005)
[58] Goldsmith and Samson (2002)
[59] Tilbury and Calvo (2005)
[60] There have been some exceptions but this statement does apply to a significant number of EE programs in Australia.
[61] Stevenson (1987); Spork (1997)
[62] Jickling (1992); Jickling and Spork (1998)
[63] Jickling (1992)
[64] Fien (1993b); Huckle and Sterling (1996)
[65] Mostly in Asia-Pacific, Europe and the Middle East. Latin America and Africa are they still resistant to adopting this discourse – their argument is that their conception of EE has always addressed the 'for' as well as the 'about' component of sustainability. See Gaudiano (1999).
[66] IUCN CEC (2004)
[67] Huckle and Sterling (1996); Fien (1993b); Tilbury and Wortman (2004)
[68] See Volume 3 of this series which documents the range of EE activities that are taking place which involve citizenship participation in end-of-pipe activities.

[69] See Section 1.1 of this Volume.
[70] Scoullos and Malotidi (2004, p.25); Tilbury (2004)
[71] See Volume 2 of this series for evidence and arguments.
[72] Tilbury (2004a)
[73] Jensen and Schnack (1997); Hesselink et al (2000)
[74] Tilbury (2004a)
[75] Robottom and Hart (1993)
[76] Jensen and Schnack (1997, p.174)
[77] Jensen (2002 p.326)
[78] See Volume 5 of this series, p.15
[79] UNESCO (2002)
[80] See 'Getting to the Root of the issues' on page 18 of this volume
[81] Stephen Sterling argues that some approaches can mislead learners into thinking that all environmental issues can be 'solved' through problem-solving approaches He argues, that as many environmental issues are characterised by complexity, they often cannot be 'solved' as such, rather ameliorated or lessened (or require reframing in order to address root causes). This involves some understanding of and limits of simple 'cause and effect' analysis. See Volume 2 for indepth coverage of this argument.
[82] Tilbury (1995)
[83] Tilbury and Bowdler (2003)
[84] UN (2002a and 2002b)
[85] UNESCO (2002)
[86] Hicks and Holden (1995)
[87] Tilbury and Wortman (2004)
[88] Hicks and Holden (1995)
[89] Hicks and Holden (1995, p.17)
[90] Tilbury and Wortman (2004)
[91] Adapted from Tilbury and Wortman (2004)
[92] UNESCO UNEP (1987); IUCN UNEP and WWF (1991)
[93] Sterling (1998; 2004)
[94] Sterling (2004)
[95] Sterling in Tilbury and Wortman (2004).
[96] Sterling (2004)
[97] Sterling (2004)
[98] Capra (1975 and 1996)
[99] Sterling (2004)
[100] Sterling (2004)
[101] Capra (1975 and 1996)
[102] Pepper (1996)
[103] See Volume 2 of this series.
[104] Doppelt (2003)
[105] Doppelt (2003 p.17)
[106] See Volume 2 of this Series.
[107] SustainUs (2005)
[108] Adapted from Sterling (2004) in Tilbury and Wortman (2004)
[109] Tilbury and Wortman (2004)
[110] Tilbury and Wortman (2004)
[111] Tilbury and Wortman (2004)
[112] Sustainability Education Center & The Center for the Study of Expertise in Teaching and Learning (2003)
[113] For more information see: http://www.aries.mq.edu.au
[114] Text adapted from Tilbury and Wortman (2004)
[115] Text adapted from Tilbury and Wortman (2004)
[116] UN (2002a)
[117] Tilbury and Wortman 2004
[118] UN (2002b)
[119] Sterling (1997)
[120] Niel, Sansom, Porter and Wensing (2002)
[121] Janse van Rensburg and Lotz-Sisitka (2000); Arnstein (1969)
[122] Janse van Rensburg and Lotz-Sisitka (2000)
[123] International Association for Public Participation (2002)
[124] Volume 2 (see 'From Action to Participation' on page 26) and Volume 5 (see 'Learning for Sustainability in the Curriculum' on page 14) provide examples of how participation can contribute to sustainability in these sectors.
[125] Government of Victoria (2004)
[126] Government of Victoria (2004)
[127] Adapted from Tilbury and Wortman (2004)
[128] Ryan (2003)
[129] Ryan (2003)
[130] In her Keynote address to the Educational Research Association of Singapore (1997)
[131] Schreuder and Le Grange(1998)
[132] Social learning is the collective action and reflection that occurs among different individuals and groups as they work to improve the management of human and environmental interrelations. Keen, Brown and Dyball, (2005, p.4)
[133] Text extract from Tilbury and Wortman (2004)
[134] Ryan (2003) citing Allen et al (2001); International Institute for Sustainable Development (2005); Kara and Quarless (2002).
[135] Adapted from Tilbury and Wortman (2004)
[136] Ryan (2003)
[137] International Institute for Sustainable Development (2005)
[138] Adapted from Tilbury and Wortman (2004)
[139] Environment Australia (2000a)
[140] See http://www.deh.gov.au/education/nap/index.html for further information
[141] Environment Australia (1999)
[142] Environment Australia (2000b) Letter accompanying the "Environmental Education for a Sustainable Future: National Action Plan
[143] Visit www.aries.mq.edu.au for further information
[144] NSW Government (2001)
[145] Coad (2003); Heck (2003); Smith (2004)
[146] Curriculum Corporation (2003)
[147] Curriculum Corporation (2003)
[148] Malone et al. (2004)
[149] NSW Government (2002)
[150] Government of Victoria (1998)
[151] Kliminski and Smith (2003)
[152] Beck and Crawley (2002)
[153] McKeown and Hopkins (2003)
[154] For example: 53% of survey respondents rate Australian industry as performing below average in corporate citizenship (Birch, 2002); and only 14% of the top 100 companies in Australia have prepared sustainablity reports (Stratos, 2003).
[155] Global Reporting Initiative (2002)
[156] See Volume 5 of this series.
[157] Sustainable Development Education Panel (2003)
[158] Tilbury and Keogh (2004)
[159] Talloires Declaration; Australian Ecological Development Charter; Halifax Declaration; The Kyoto Declaration; Swansea Declaration; COPERNICUS University Charter for Sustainable Development; Luneburg Declaration; and the Ubuntu Declaration.
[160] See Volume 5 of this series, p.22.
[161] House of Commons Environmental Audit Committee (2005) Victorian Association of Environmental Education (2004)
[162] IUCN CEC (2003); Kelsey (2003); Hesselink et al (2000)
[163] IUCN CEC (2003); Kelsey (2003); Hesselink et al (2000)
[164] Sterling (1996)
[165] Government of Canada (2002)
[166] UNESCO (2004)

[167] UNESCO Asia and Pacific Regional Bureau for Education (2005)
[168] UNECE (2005)
[169] Sustainable Development Education Panel (2003)
[170] Department of Education and Skills (2003)
[171] 'A Better Quality of Life' has been replaced by a new strategy for sustainable development, 'Securing The Future' on 7 March, 2005. This new Strategy takes account of developments since the 1999 Strategy, both domestically and internationally; the changed structure of government in the UK with devolution to Scotland, Wales and Northern Ireland; greater emphasis on delivery at regional level and the new relationship between government and local authorities.
[172] Sustainable Development Education Panel (2003, p.6)
[173] UN (1992)
[174] UN (2004)
[175] Sterling (1996)
[176] IIED (2000)
[177] OECD (2001)
[178] See: UGANDA (1999), CHINA (2000) AND ARGENTINA (2001)
[179] SDEP (2003)
[180] Department of Education and Skills, England (2003)
[181] Department for Environment, Food and Rural Affairs, UK (2005b)
[182] Department for Environment, Food and Rural Affairs, UK (2005a)
[183] The SDEP was disbanded in late 2003
[184] SDEP (2003)
[185] Dept of Education and Skills, England (2003)
[186] DEFRA (2004)
[187] Government of Canada (2002)
[188] Ministerie van LNC, The Netherlands (2004, p.1-3)
[189] UNESCO Asia and Pacific Region Bureau for Education (2005, p.12)
[190] UNECE (2005, p.7)
[191] House of Commons Environmental Audit Committee (2005, p43)
[192] Sterling (1996); EEAC (2002); Scriabine and Day (2000)
[193] See 'Focus on: Process of Developing Strategic Frameworks in Learning for Sustainability' on p.106
[194] Vasarhelyi and Victor (eds) (2000)
[195] Government of Western Australia (2003)
[196] Vasarhelyi and Victor (eds) (2000)
[197] Vasarhelyi and Victor (eds) (2000)
[198] Government of Western Australia (2003)
[199] Government of Western Australia (2003)
[200] Government of Western Australia (2002)
[201] Tilbury and Wortman (2004)
[202] Ministerie van LNV (2004)
[203] Ministerie van LNV (2004)
[204] Stiles (2001)
[205] Stephen Sterling personal communication (September, 2005)
[206] Ministry of the Environment, Poland (2001)
[207] Sterling (1996)
[208] Ministerie van LNV (2004)
[209] Sterling (1996)
[210] Sterling (1996)
[211] Stephen Sterling personal communication (September, 2005)
[212] Sterling (1996)
[213] Sterling (1996)
[214] IUCN (2003)
[215] McPherson (2003)
[216] e.g. Spanish National Environmental Education Strategy, Ministry of Environment, Spain (1999)
[217] e.g. In NSW, the Council for EE facilitated the public engagement process.
[218] Environment Australia (2000)
[219] See Section 1.1 of this document
[220] Government of Western Australia (2004)
[221] Government of Western Australian (2004, p.35)
[222] Government of Victoria (2005)
[223] Government of Victoria (2005, p.16-28)
[224] Government of Victoria (2005, p.28)
[225] See Volume 2 and 3 of this series for evidence and arguments.
[226] Stephen Sterling personal communication (September, 2005)
[227] Environment Australia (2000)
[228] Curriculum Corporation (CC) and Australian Government Department of the Environment and Heritage (DEH) (2005) Also see section 1.4 of this volume.
[229] NSW Government (2000)
[230] See also http://www.vaee.vic.edu.au/whatsnew/
[231] Smith (2003); Victorian Association of Environmental Education (2004)
[232] Smith (2003)
[233] Victorian Association of Environmental Education (2004)
[234] Duncan et al. (2004)
[235] Mark Latham (2004) as quoted in http://www.imaginingaustralia.com
[236] Sterling (1997)
[237] Smith (2003)

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Appendix A
Envisioning a better future

The strategic frameworks reviewed all provide a vision for learning for sustainability in their country. Many also interpret the process of **envisioning** or **futures thinking** as a powerful tool which can be used to develop a shared understanding and commitment to implementing the strategy.

The participatory process of developing a vision is understood in many strategic frameworks as important for encouraging dialogue and collaboration at the early stages of strategy development. This in turn expedites the acceptance and implementation of strategy in later stages. A collaboratively constructed vision for learning for sustainability is seen to *provide direction and motivation* for coordinated and committed action. Visionining is also perceived a critical skill in learning for sustainability.

- **CANADA: Framework for Environmental Learning and Sustainability in Canada**
  One of the critical drivers behind the development of the '*Framework for Environmental Learning and Sustainability in Canada*'[1] was the need for a strategic vision to support the efforts of education practitioners and the need to empower those responsible for the implementation of that vision.

  The framework has provided a basis for local action plans and seeks to build the capacity of all learners and educators to achieve a sustainable future. Education practitioners in Canada called for a vision to guide their programs:

  'We have many partners to help us implement our programs, but what we need is a strategic vision to support our efforts.'

  Christian Payeur, Centrale des Syndicats du Québec. Government of Canada (2000, p.7)

- **ENGLAND: Learning to Last: The government's sustainable education strategy for England**
  The draft sustainable education strategy for England, which was presented to Ministers in February 2003 by the Sustainable Development Education Panel, outlined the main challenge ahead, to win the hearts and minds of the people. It proposed that the main way of achieving this was through the development and reinforcement of a positive vision. Of the five obstacles to progress that was singled out in the strategy, the first is the 'lack of a positive vision'[2].

  'IV. The key focus for action must be at local and community levels. Government's role is not to fill gaps but to set priorities and expectations, to facilitate and support. The challenge is to win hearts and minds and to motivate people to take personal action. This will not happen without mobilising channels of informal communication, including the media, youth and trade associations, nongovernmental organisations of all kinds, museums, libraries, galleries, the arts, sports and many more. What is needed is a positive vision reinforced by a simple, consistent message expressed in plain language. That is the platform on which to build with the increasing number of champions, both individuals and organisations.'

  Sustainable Development Education Panel (2003, p.3)

- **UNITED NATIONS: UNECE Strategy for Education for Sustainable Development: Vision**
  The '*UNECE Strategy for Education for Sustainable Development*' provides one of the most comprehensive visions for the future of the region which incorporates the key components of learning for sustainability. The aim of this vision is to provide the motivation and inspiration for UNECE member States to develop and incorporate ESD into their formal education systems, in all relevant subjects, and in nonformal and informal education.

  'Our vision is of a region that embraces common values of solidarity, equality and mutual respect between people, countries and generations. It is a region characterized by sustainable development, including **economic vitality, justice, social cohesion, environmental protection** and the sustainable management of natural resources, so as to meet the needs of the present generation without compromising the ability of future generations to meet their needs.'

  UNECE (2005, p.1)

- **ASIA-PACIFIC Regional Strategy for Education for Sustainable Development**
  A key objective of the UN Decade in ESD, as recognised by the Asia Pacific Strategy, is to implement ESD activities and programs at a community level. This is seen as critical as it is at this level that the impact of sustainability (and alternatively of unsustainable development) is felt most keenly. It is here that livelihoods are enhanced or diminished and resources regenerated or depleted. 'There are several core elements of success for engaging communities in ESD. These include:

- 'Community participation in visioning, strategic planning and resourcing discussions.'

  UNESCO Asia and Pacific Regional Bureau for Education (2005, p.7)

1 Government of Canada (2002).
2 Sustainable Development Education Panel (2003, p.7).

Appendix B
Systemic Thinking

Many of the strategic frameworks incorporate elements of systemic thinking in their planning and approach to change for sustainability as well as advocate it as a learning tool.

Systemic thinking is understood by these documents as a better way to understand and manage complex situations as it emphasises integrative approaches, which take into account the relationships between system components and works toward long-term solutions critical to addressing issues of sustainability. It is seen as offering an innovative approach to looking at the world and the issues of sustainability in a broader, interdisciplinary and more relational way.

- **NEW ZEALAND: See Change: Learning and education for sustainability**
  This document is not a strategic framework but a discussion paper which has served to encourage debate about learning for sustainability reaching sectors which may not have seen the relevance of education and learning to the achievement of sustainability goals. It recognises and promotes systemic change as a goal of the strategy as well as a means of developing learning for sustainability approaches.

  'Education for sustainability therefore needs to focus on both individual and systemic changes to resolve unsustainable practices. This will require a redesign of many systems that currently exist in societies. As a result, education for sustainability is often perceived as highly political. It aims to transform institutions in society that are promoting unsustainable practices, or holding back sustainable alternatives, so that people can work towards a better future.'

  Parliamentary Commissioner for the Environment (2004, p.48)

- **JAMAICA: National Environmental Education Action Plan for Sustainable Development**
  Systemic thinking is one of the 13 key principles identified by the Action plan which are to guide Environmental Education practice.

  '5) Systemic
  Environmental Education for Sustainable Development treats critical issues as well as their causes and inter-relationships, systemically, taking account of their social and historical contexts. Fundamental issues relating to development and the environment, including population, health, peace, human rights, democracy, hunger, degradation of flora and fauna, are considered in this manner.'

  NRCA (1999, Chapter 2)

- **SPAIN: Spanish Federal Strategy for EE**
  The Spanish Federal Strategy for EE, called the '*Libro Blanco de la Educación Ambiental en España*' has a strong learning for sustainability focus. It not only encourages the development of integrative thinking skills in people but also strategises in a way which recognises the systemic way in which change needs to happen across the states and sectors in Spain.

  The Spanish government also developed a simplified version of this strategy which was used to communicate with stakeholders the key principles underpinning EE and learning for sustainability approaches in the Federal Strategy. Systemic thinking also features in this document.

Appendix C
Critical (Reflective) Thinking

The strategic frameworks reviewed, recognised that critical thinking is an essential part of learning for sustainability approaches. Critical thinking is interpreted as a process which challenges us to examine the way we interpret the world and how our knowledge and opinions are shaped by those around us. Its role in helping to develop a deeper understanding of interests behind our communities and the influences of media and advertising in our lives is acknowledged. The frameworks articulate how critical thinking combined with systemic thinking are prerequisites for action towards sustainability[3].

- **BALTIC REGION: An Agenda 21 for Education in the Baltic Sea Region – Baltic 21E**
  The *Baltic 21* adopts the definition and scope of ESD provided by the Haga Declaration as its basis. This states that ESD should be based on an integrated approach to economic, societal and environmental development and encompass a broad range of related issues such as democracy, gender equity and human rights.

  'The Haga Declaration also emphasises that the creation of knowledge about and awareness of sustainable development must be seen as a lifelong process for the individual person. Furthermore, it states that ESD demands an educational culture directed towards a more integrative, process-oriented and dynamic mode emphasising the importance of critical thinking, social learning and the democratic process. The definition of ESD must take its starting point from the cultural and social situation in each country. However, much must be left to the educator to make decisions concerning the content and method to be used in the classroom or other education situations. This poses a great challenge for educators, but at the same time provides great scope for their professionalism.'

  Baltic 21 (2002, p.13)

- **THE NETHERLANDS: Learning for Sustainable Development: from Margin to the Mainstream**
  Education is a key factor for change. Therefore the Dutch program '*Learning for Sustainable Development 2004-07*' picks up precisely at this point. In lines with the goals of the UNECE strategy on ESD and the Decade for ESD, the national program creates effective learning processes in order to enable judgements and choices in favour of sustainable development. Learners at all levels will be encouraged to use systemic, critical and creative thinking and reflection in both local and global contexts.'

  Ministerie van LNV, The Netherlands (2004, p.1-3)

- **UNITED NATIONS: UNECE Strategy for Education for Sustainable Development**
  The '*UNECE Strategy for Education for Sustainable Development*' provides one of the most comprehensive visions for the future of the region which incorporates the key components of learning for sustainability. The aim of this vision is to provide the motivation and inspiration for UNECE member States to develop and incorporate ESD into their formal education systems, in all relevant subjects, and in non-formal and informal education.

  'Education, in addition to being a human right, is a prerequisite for achieving sustainable development and an **essential tool for good governance, informed decision-making and the promotion of democracy**. Therefore, education for sustainable development can help translate our vision into reality. Education for sustainable development develops and **strengthens the capacity** of individuals, groups, communities and organizations to make judgments and choices in favour of sustainable development. It can **promote a shift** in people's mindsets and in so doing enable them to make our world safer, healthier and more prosperous, **thereby improving the quality of life**. Education for sustainable development can provide **critical reflection and greater awareness and empowerment** so that new visions and concepts can be explored and new methods and tools developed.'

  UNECE (2005, p.1)

3 UNECE (2004, p.1)

Appendix D Participation in Decision-Making and Cross-Sectoral Engagement

The strategic frameworks reviewed articulated the importance of developing participation skills in decision-making as well as providing opportunities for cross-sectoral engagement through learning for sustainability initiatives. The participatory process is seen as important for the development of *personal and institutional commitment* to work together and with stakeholders from other sectors to address sustainability issues.

- **THE NETHERLANDS: Learning for Sustainability**[4]
  The interministerial collaboration which underpins this strategy is highly innovative and closely aligned to learning for sustainability thinking.

  The Dutch have addressed the need for an integrated approach to strategy development, through which all government ministries collaborate to develop policies and programs addressing learning for sustainability. A national learning for sustainability steering committee is made up of representatives from every major government department and implementation of the strategy is devolved to provincial agencies[5]. This has the benefit of creating a broad sense of ownership for the strategy, not just in the sense that multiple stakeholders originate its content, but that it involves a process of shared understanding, commitment and participatory decision-making.

- **SPAIN: National EE Strategy**
  The Spanish national EE strategy (which has strong alignment with learning or sustainability) has been commended as an ambitious document which sought to improve co-ordination and collaboration between agencies[7]. It advocates the development of consensual negotiated documents, even though they may take longer to develop. This reflects the view that learning for sustainability strategies provide an important platform for stakeholder education and engagement, and not just the fulfillment of an obligation to deliver a document[8]. Spain's national EE strategy took the framework approach a step further and invited regional states to formulate their own local strategies in learning for sustainability with the result that Galicia, Castilla y Leon, Navarra, Catalonia and Madrid all have developed EE strategies in the regions[9].

- **BALTIC SEA REGION: Baltic 21 Education Program**[6]
  The Baltic learning for sustainability strategy illustrates good practice in combining top-down with bottom-up approaches in strategy formulation. Regional and national bodies have provided a facilitative framework and encouraged a broader participation process at the local level. This participation has involved an impressive range of stakeholders which includes member states, the European Commission, inter-governmental organisations, international financial institutions, international subregional, city and business community networks and other international nongovernmental networks. This builds a sense of ownership for the strategy and also provides a means to engage stakeholder groups in dialogue and decision-making processes.

  In 2000, the Ministers of Education of each country issued the Haga Declaration in support of the Baltic Agenda 21 Education Program. A regional network was subsequently formed comprising ministries, authorities and educational institutions dedicated to the achievement of sustainability through education and training. Working groups were established for formal education, higher education and non-formal education in each country with a view to reviewing current practice and provision. This review involved additional participatory activities intended to broaden participation in the process such as online discussions, seminars and interviews.

  These working groups established goals and action plans for their sectors, which form the basis of the Baltic Agenda 21 Education Program, formally adopted in 2002. In addition to informing national action plans, the strategy provides a framework for five action areas, common to all: policies and strategies; competence development within the education sector; continuing education; teaching and learning resources; and research and development of education for sustainability.

4 Ministerie van LNV (2004).
5 Ministerie van LNV (2004).
6 Baltic 21 (2002).
7 Gutierrez & Benayas (2000).
8 Gutierrez & Benayas (2000).
9 Gutierrez & Benayas (2000).

Appendix E Partnerships

Regional and national strategic frameworks reflect the international partnerships agenda. They recognise the key role they play not only in implementing strategic frameworks but also as a key component of learning for sustainability initiatives. Adopting this type of approach is seen to facilitate *network-building* and improves *communication across* multiple stakeholder groups and increases sustainability outcomes.

- **ASIA PACIFIC: Working Paper: Asia Pacific Regional Strategy for Education for Sustainable Development**
  The '*Working Paper: Asia Pacific Regional Strategy for Education for Sustainable Development*', established in 2005, identifies the government, communities, the private sector, formal education institutions, civil society, media, youth and international agencies as key stakeholders for implementing ESD across the region. The strategy emphasises that through partnerships stakeholders with be able to learn and support each other throughout the ESD implementation process.

  'Long-term partnerships are essential in initiating and continuing the private sector's involvement in ESD. Involvement must be more substantial and systematic than arbitrary corporate donations. Partnerships must not be viewed as simply business-NGO.'

  UNESCO Asia and Pacific Regional Bureau for Education (2005 p. 8)

  '…there is a need to involve youth in planning, policy-making and decision-making for ESD. Initiatives at all levels should aim to strengthen partnerships with youth for ESD. Youth networks and action/research projects can also substantially contribute to ESD in the region.'

  UNESCO Asia and Pacific Regional Bureau for Education (2005 p. 11)

- **UNITED NATIONS: UNECE Strategy for Education for Sustainable Development**
  The '*UNECE Strategy for Education for Sustainable Development*'[10], adopted in March 2005, recommends that stakeholders from education and science communities, the health sector, the private sector, transport and industry, trade and labour unions, local authorities, the mass media, NGOs, local communities, indigenous peoples and international organisations should be invited to define their own priorities and take responsibility for implementing the strategy in their respective spheres of influence. This approach will have the benefit of building a sense of ownership and responsibility in those groups. Partnerships, cooperation and participatory approaches to national strategy development are advocated throughout the document.

  '10. The Strategy encourages interdepartmental, multi-stakeholder cooperation and partnerships, thereby stimulating investment of material and human resources in ESD.'

  UNECE (2005, p.3)

  'To be effective ESD should:…
  (c) Increase cooperation and partnerships among members of the educational community and other stakeholders. Further involvement of the private sector and industry in educational processes will help to address rapid technological development and changing working conditions. Learning activities in close relation with society will add to learners' practical experience'

  UNECE (2005, p.7)

  '65. The complex nature of ESD requires that, in addition to the education community, other relevant international actors should be invited to work in partnership to implement the Strategy. This is especially relevant for international cooperation aimed at improving SD related knowledge and skills for different professionals and decision makers.'

  UNECE (2005, p.12)

10 UNECE (2005).
11 House of Commons Environmental Audit Committee (2005, p43).

Appendix F
Monitoring and Evaluation

The importance of monitoring and evaluation as a component of learning for sustainability is mentioned in all the frameworks reviewed. The documents encourage this as a component of all learning for sustainability initiatives. Interestingly, they also refer to the need to monitor and evaluate the strategic frameworks themselves but wrestle with how to undertake this task. Reference to the need for indicators is made in the more recent frameworks

- **ASIA PACIFIC: Working Paper: Asia-Pacific Regional Strategy for Education for Sustainable Development**
  The '*Asia-Pacific Regional Strategy for Education for Sustainable Development*'[12] sees UNESCO and IUCN working in partnership to develop a framework of indicators which will be used as a planning tool as well as for monitoring and evaluation. This partnership will cover a 3-year period during which stakeholders in selected Asia-Pacific countries will be engaged in a process to define the ESD indicators[13].

  'A key challenge for monitoring and evaluation will be the identification of suitable, relevant and measurable indicators at every level – local, national, regional and international – for each initiative and programme.

  …qualitative, as well as quantitative, evaluation methods will be necessary to track the Decade, as changes in values and behaviours cannot be captured soley in numerical data.'

  UNESCO Asia and Pacific Regional Bureau for Education (2005, p.12)

- **UNITED NATIONS: UNECE Strategy for ESD**
  The '*UNECE Strategy for Education for Sustainable Development*' mandated the development of a set of indicators (see below). To guide this process the High-level Meeting of Environment and Education Ministries in March 2005 established an ad hoc group of experts to develop indicators to measure the effectiveness of the implementation of the Strategy (see below). This is significant as monitoring and evaluation are key components of strategy development which are often overlooked or underfunded.

  Expert Group on Indicators
  'The members of the group should have extensive experience in national and international environmental and education policies, in environmental education and in education for sustainable development. Its composition should ensure equitable geographical representation of the UNECE member States.

  The members of the expert group will be designated by Governments. Representatives of international organizations, in particular UNESCO, and nongovernmental organizations can be invited as observers.'

  UNECE (2005b)

- **ENGLAND: Environmental Education: Follow-up to Learning the Sustainability Lesson**
  Monitoring and evaluation of progress have been highlighted in England as an important part of a learning for sustainability approach but one which has been repeatedly neglected. In its review of the UK Sustainable Development Strategy the House of Commons Environmental Audit Committee felt that a very important addition which should be incorporated into the Strategy was the inclusion of ESD as a headline indicator[11]. The committee was particularly critical of the lack of progress made by DfES and DEFRA in developing ESD indicators since the first inquiry in 2003.

  'It is unclear why there is a delay in the development of the ESD indicator, more than twelve months after we raised the issue with the Secretary of State in DfES. We are left to speculate on whether it is yet another example of the low priority afforded to ESD, or whether it is an indication that DEFRA and DfES simply don't know what to do with it. Whatever the reason for the delay, it is extremely disappointing and we would urge DEFRA and DfES to agree a suitable indicator as soon as possible.'

  House of Commons Environmental Audit Committee (2005, p.44)

- **JAMAICA: National EE Action Plan for Sustainable Development (NEEAPSD)**
  In 2003 the Jamaican NEEC decided to evaluate the implementation of the 'NEEAPSD' with a view to making recommendations to increase the impact of the learning for sustainability strategy.

  Evaluation of the strategy involved a national consultation process and the commissioning of two studies: a review of the institutional framework required to support implementation of the plan; as well as a report detailing the actual implementation of the action plan over the preceding five years.

  The recommendations made by the institutional framework review highlighted the importance of building awareness for the strategy and of integrating the action plan into the planning processes of the agencies responsible for its delivery[14]. The assessment of the action plan's implementation found that a good start had been made on many of the recommendations but that a clear implementation plan with timeframes would have been beneficial. The report also pointed to the need for a 'popular' version of the strategy document to increase its penetration.

12 UNESCO Asia and Pacific Regional Bureau for Education (2005).
13 UNESCO Asia and Pacific Regional Bureau for Education (2005, p.12).
14 Business and Environment Management Services (2004).

Appendix G
Lifelong learning: Beyond formal education

Lifelong learning often features as a concept in the learning for sustainability frameworks. It is often associated with the need to create learning for sustainability opportunities beyond formal education. It seeks to involve people in in learning for sustainability experiences regardless of their roles, levels, responsibilities or availability.

- **ENGLAND**

'The draft document '*Learning to Last*'[16] was formulated in response to the national strategy for sustainability, which recognizes that stakeholders will not be able to engage with sustainability issues unless they are educated to do so. The government considers that investing in learning for sustainability is the principle mechanism by which a citizenry both engaged and educated for sustainability will be achieved. This is reflected in its aim, which is to ensure that education for sustainability is embedded in all aspects of lifelong learning.

Learning to Last

'1.2 Throughout this strategy the words education and learning are used interchangeably. Both are to be understood very widely to include all kinds of learning and all places where learning can occur, both formally and informally – such as the home, the community, the workplace, museums, and the cinema – as well as in schools, colleges and universities.

1.5. The Aim of this strategy is, therefore to ensure that all aspects of life long learning are fully engaged in the provision of effective education for sustainable development.'

Sustainable Development Education Panel (2003, p.6)

'4.6. The Government for its part is committed to extending to everyone access to learning and the opportunity for upgrading their skills right throughout life. This emphasis on workforce development is prompted by the sheer pace of change at work and the demands of globalisation.'

Sustainable Development Education Panel (2003, p.14)

- **CANADA**

The Canadian learning for sustainability framework[15] embraces all the ways in which learning can take place at every stage of life and in a broad range of situations.

The Framework for Environmental Learning and Sustainability

'(This framework) is meant to be inclusive and must offer an opportunity for all to discuss different approaches to promote lifelong learning with respect to the environment and sustainability. It is hoped that the framework will provide Canadians with the desire to create safe and respectful places for ongoing dialogue on these important issues. Learners and educators of all ages and from all sectors of society should be able to find common ground among the different concepts and their respondents as we all work together.'

Environment Canada (2002, p.1)

- **UNECE**

The strategy's aim is to encourage UNECE member states to develop and incorporate learning for sustainability in the formal education sector, as well as non-formal and informal settings.

UNECE Strategy for Education for Sustainable Development

'30. It is important to support non-formal and informal ESD activities, since they are an essential complement to formal education, not least for adult learning. Non-formal ESD has a special role as it is often more learneroriented, participatory and promotes lifelong learning. Informal learning in the workplace adds value for both employers and employees. Therefore, the cooperation among the different actors involved in all forms of ESD should be recognized and encouraged.'

UNECE (2005, p.6)

15 Environment Canada (2002).
16 Sustainable Development Education Panel (2003).

Glossary

- **Action Competence**
  Action competence is inherently linked to the concept of democracy. In this context actions are viewed not as reactive behaviour or lifestyle changes but rather as an active exercise of democratic participation in society. The action should be undertaken consciously, intentionally and voluntarily. Action competence occurs when citizens:

  - have a critical and holistic knowledge of the issue;
  - are committed, motivated and driven;
  - can envision a sustainable solution; and
  - have experience taking successful concrete action.

  Action competence is seen by some as crucial outcome for Environmental Education because it brings together the processes and practices of education with the need to develop democratic citizenship skills to improve quality of life.

- **Action Learning**
  Action learning is a process designed to build capacity using a form of reflection and assessment. The improvement of practice is the ultimate goal. The process involves the participants developing an action plan, implementing the plan and reflecting on what they have learnt from this. A facilitator and/or mentor assists the participants in developing their plan and learning from their experiences. Increasingly, it is being used in group settings where a number of people come together to critically reflect upon professional knowledge and improve practice.

- **Action Plan**
  An action plan is a written plan of implementation often detailing the timelines, stages, roles and/or responsibilities of projects related to the strategy's objectives.

- **Action Research**
  Action Research can be used as a collaborative research tool, which is often represented as a four-phase cyclical process of critical enquiry – plan formation, action, outcome observation and reflection. It aims not just to improve, but to innovate practice.

  Action Research provides a valuable process for exploring ways in which sustainability is relevant to the researchers' workplaces and/or lifestyles. It views change as the desired outcome and involves participants as researchers of their own practice. In this way Action Research produces more than just a research document. It results in catalytic change for sustainability. Its focus on critical enquiry and continuous self-evaluation makes it a useful tool for professional development in Environmental Education. Critical Action Research aims to change systems and to embed change in practice.

- **Agenda 21**
  Agenda 21, is an intergovernmental agreement signed at the United Nations Conference on Environment and Development held in Rio in 1992. This document consisting of 40 chapters provides an agenda for advancing sustainability. It was the first document to examine the social, economic and environmental issues facing our world, focusing on current issues whilst also promoting and examination of future needs. Agenda 21 outlines objectives and actions that can be taken at local, national and international levels and provides a comprehensive blueprint for nations throughout the world who are starting to make the transition to sustainability. Chapter 36 of Agenda 21 accords special significance to the role of education as 'the most effective means that society possesses for confronting the challenges of the future'[a].

- **Capacity building**
  Capacity Building consists of participative training which take place either through a formal course, workshop or in-situ mentoring support. The focus is the development of the individual and/ or the organisation.

- **Carrying capacity**
  Carrying capacity is the term given to the maximum number of organisms that a given area of habitat can support indefinitely, without degrading the habitat or causing social stresses that result in population decline. The term is often applied by those who have concerns about the ratio of the human population against available resources. However, this application is considered problematic since ethical beliefs and the use of technology add dimensions to the human situation which make it more than a straight-forward calculation.

- **Citizenship action**
  Citizenship action is defined as those actions undertaken by citizens who have an awareness and understanding of social, economic or environmental issues and have the capacity to actively participate in their resolution. Types of citizen action can include:

  - *Persuasion*: working to convince others that a certain: action is correct and needed.

- *Consumer Action*: choosing products that are compatible with a particular environmental and social justice philosophy and boycotting products that are not.
- *Political Action*: bringing pressure on individuals or organisations (governmental or nongovernmental) to influence decision-making.
- *Education*: facilitating a process of learning to help others reflect on their current actions and build their capacity to contribute ot a better future

• Community Education
Community Education programs are taken to refer to all education programs which fall outside of the business and industry, school, further and higher education sectors.

• Corporate Citizenship
Corporate citizenship refers to the way a company leverages their social, economic and human assets. When a company uses its assets to bring about measurable gains not only for itself, but for society as well, that company is acting as a good corporate citizen. A good corporate citizen integrates basic social values with everyday business practices, operations and policies, so that these values influence daily decision-making across all aspects of the business. It takes into account its impact on all stakeholders, including employees, customers, communities, suppliers, and the natural environment. For further information refer to 'Corporate Social Responsibility'.

• Corporate Social Responsibility (CSR)
Corporate Social Responsibility is the decision-making and implementation process that guides all company activities in the protection and promotion of international human rights, labour and environmental standards and compliance with legal requirements. CSR involves a commitment to contribute to the economic, environmental and social sustainability of communities through the on-going engagement of stakeholders, the active participation of communities impacted by company activities and the public reporting of company policies and performance in the economic, environmental and social arenas. For further information refer to 'Corporate Citizenship'.

• 'Critical Theory'
'Critical theory' is a philosophical framework that seeks to radically critique systems of knowledge and power. 'Critical theory' seeks to develop systemic changes as opposed to individual behaviour changes. It emphasizes the importance of engaging people in thinking critically and developing their own responses and actions to issues rather than imposing on them previously constructed actions. 'Critical theory' attacks social practices, which obstruct social justice, human emancipation and ecological sustainability. It is not only 'critical' in the sense of deconstructive' in relation to dominant thinking, but also 'constructive' in the sense of exploring alternatives to it. 'Critical theory' is what underpins a learning for sustainability approach to Environmental Education. For further information see 'Critical Thinking'.

• 'Critical' Thinking
'Critical' Thinking is an essential part of learning for sustainability approaches to Environmental Education. It challenges us to examine the way we interpret the world and how our knowledge and opinions are shaped by those around us. 'Critical' thinking leads us to a deeper understanding of interests behind our communities and the influences of media and advertising in our lives.

• Education *about* the environment
Education *about* the environment is the most commonly practiced approach in Environmental Education. It focuses on developing key knowledge and understanding about natural systems and complex environmental issues as well as developing an understanding of the human interaction with these systems and issues.

• Education *in* the environment
Education *in* the environment is an approach, which provides opportunities for learners to have direct experience in the environment and develop positive attitudes and values towards stewardship of the environment. The approach may foster a value-based environmental concern of the importance and fragility of ecosystems and landscapes. While ecological concepts may be taught through these explorations, the focus is on having positive experiences in a natural setting.

• Education *for* the environment
Education *for* the environment moves beyond education *in* and *about* the environment approaches to focus on equipping learners with the necessary skills to be able to take positive action. The education *for* the environment approach promotes critical reflection and has an overt

agenda of social change. It aims to promote lifestyle changes that are more compatible with sustainability. It seeks to build capacity for active participation in decision-making for sustainability. In practice, however, education *for* the environment is often interpreted as the involvement of learners in one-off events or individual actions (e.g. tree planting) although occasionally they can trigger greater change on a social level.

- **Environmental Education**

Environmental Education within this series refers to the overall field of education which engages learners with their environments, be they natural, built or social. The range of practices and approaches to Environmental Education have evolved significantly since the term was first used in the late 1960s. Initially in the 1970s educators perceived Environmental Education as '*education about the environment*' which focuses on developing knowledge and understanding (see glossary). Environmental Education then progressed to favour the approach of 'education *for* the environment' emerged as a dominant force (see glossary) with its focus on participation and action to improve the environment.

Currently within Environment Education one can still find examples of all these approaches in practice. The most recent development in Environmental Education theory and practice is 'learning for sustainability'. This approach challenges current practice in several ways to achieve more systemic change towards sustainability (for more information see 'Learning for Sustainability').

- **Environmental Education for a Sustainable Future: National Action Plan**

A national Australian strategy launched in 2000 that outlines a direction for Environmental Education in Australia. The plan aims to[b]:

- increase the profile of Environmental Education;
- implement a national coordinating body for Environmental Education;
- provide professional development opportunities for teachers and others involved in Environmental Education;
- develop resources for Environmental Education; and
- integrate Environmental Education into mainstream education and training activities.

- **Envisioning and Futures Thinking**

Envisioning a better future is a process that engages people in conceiving and capturing a vision of their ideal future. Envisioning, also known as 'futures thinking', helps people to discover their possible and preferred futures, and to uncover the beliefs and assumptions that underlie these visions and choices. It helps learners establish a link between their long term goals and their immediate actions. Envisioning offers direction and energy and provides impetus for action by harnessing peoples' deep aspirations which motivate what people do in the present.

- **Essential Learnings Frameworks**

There are many ways in which curriculum is organised within schooling systems. Essential Learnings provide an organisational framework for the curriculum. The Essential Learnings Frameworks are designed to:

- reduce problems of a crowded curriculum;
- engage learners more deeply in their learning;
- make learning more relevant;
- improve learning across all areas;
- develop higher order thinking;
- support the transfer of learning.

It aims to respond to public concerns about current curriculum frameworks such as a cluttered and compartmentalised curriculum which provides few opportunities for students to explore issues in depth or connect their learning to real-world experience. Essential Learnings is an attempt to trim back the excesses of curriculum to focus on developing deep understandings that students need to develop now and draw upon in the future as active, responsible citizens and life-long learners in a rapidly changing world. In the Essential Learnings frameworks there is a focus on developing student capacity to reflect critically on their own thinking and to have a constructive understanding of their learning.

Essential Learnings frameworks provide opportunities for learning for sustainability in that they focus on key components of learning for sustainability such as critical and systems thinking and in-depth study of a variety of relevant issues. They are also an innovative attempt at reorienting curriculum to focus on futures in an uncertain world.

- **Facilitation**

Facilitation encourages learning to be driven by the learner. The facilitation process aligns well with the principles of sustainability as it has the following characteristics:

- enables a learner centred approach;
- equips the learner with the necessary skills and knowledge to take action and actively participate in change and decision-making;
- develops the capacity of individuals and groups to 'critically' reflect upon the social and cultural context underpinning the change they seek: and,
- offers a more democratic approach to sustainability.

The process encourages all citizens to engage in open dialogue and eliminates inequitable power hierarchies as the facilitators do not have a stake in the change for sustainability and the process does not rely on the expert knowledge. For further information please see Volume 3 of this series.

- **Framework**

A framework is a high-level structure which lays down a common purpose and direction for plans and programs.

- **Inquiry Learning**

Inquiry learning is a learner-centred teaching strategy. It is designed to encourage students to develop their own learning through responding to their own concerns by means of systematic investigation, emphasising higher order thinking skills. Inquiry learning is driven by the questions created by the participants. Participants are responsible for gathering, processing, and analyzing their data, in order to reach their own conclusions. This negotiated process (between educator and learner) usually involves:

1. *Tuning in*: identifying and defining an issue;
2. *Deciding directions*: formulating questions that require answering;
3. *Organising*: developing the process of how to investigate the issue;
4. *Finding out*: investigating the issue and collecting data;
5. *Sorting out*: processing and analysing the data;
6. *Drawing conclusions*: students express their understandings and communicate them to others;
7. *Considering action*: students participate in decision-making to identify action to address the issue;
8. *Reflection and evaluation*: students and teachers reflect on the process and evaluate the outcomes.

- **Intergenerational Equity**

Intergenerational equity is the principle that future generations have fair and equal right to the same standard of quality of life and environment as the present generation. This is a core principle of sustainable development.

- **Key Learning Areas (KLAs)**

There are many ways in which curriculum is organised within formal schooling systems; Key Learning Areas, are one such organisational construct. KLAs particularly emphasise the description and classification of formal school curriculum into composite fields of knowledge. KLAs were endorsed in 1991, as part of the first '*Australian National Statement and Profile on Education*'. Eight KLAs were identified as being core, and attainment of the significant aspects of knowledge, skills and understandings that characterise each KLA is important.

The eight KLAs are:

- English
- Languages other than English (LOTE)
- Mathematics,
- Science
- Studies of Society and Environment (SOSE)
- Technology
- The Arts
- Health and Physical education

The KLAs were re-endorsed as curriculum organisers by State, Territory and Commonwealth Ministers of Education in the '*Adelaide Declaration on National Goals for Schooling in the Twenty-first Century*' and there are a variety of state and territory interpretations of the construct.

- **Learning**

Learning is a process that influences the way people think, perceive and act. People learn through experiences over their entire lives. Learning occurs at both a conscious level or subconscious level but it usually involves critical thinking and reflecting on issues or experiences. People often learn by interacting with other people and their environment[d].

- **Learning based strategies**

Learning based strategies are used to help shift communities towards more sustainable futures. They consist of an informal but structured process which uses action learning, reflection and change to improve the effectiveness of an organisation, program or action plan.

- **Learning for Sustainability**
  Learning for sustainability has crystallized as a result of international agreements and the global call to actively pursue sustainable development. It provides a new orientation for current practice in Environmental Education. This new orientation attempts to move beyond education *in* and *about* the environment approaches to focus on equipping learners with the necessary skills to be able to take positive action to address a range of sustainability issues. Learning for sustainability motivates, equips and involves individuals, and social groups in reflecting on how we currently live and work, in making informed decisions and creating ways to work towards a more sustainable world. Underpinned by the principles of critical theory (see glossary), learning for sustainability aims to go beyond individual behaviour change and seeks to engage and empower people to implement systemic changes.

- **Learning Organisation**
  A learning organisation is one which is based on the principles of adaptive management and uses these techniques within the workplace. It promotes exchange of information between employees hence creating a more knowledgeable workforce. This produces a very flexible organisation where people will accept and adapt to new ideas and changes through a shared vision. A key component of a learning organisation is that it incorporates the principles of adaptive management.

  Adaptive management is a systematic process for continually improving management policies and practices by learning from the outcomes of operational programs. Its most effective form ('active' adaptive management) employs management programs that are designed to explore visions, develop critical and systemic thinking in the workplace.

- **Local Agenda 21**
  Chapter 28 of the '*Agenda 21*' document calls on local authorities to work with their local communities to develop a local action plan for sustainable development, or a 'Local Agenda 21.' This process recognises the role communities have to play in shaping their own future and the importance of building partnerships between local government, community, NGO and industry. Empowering local communities to participate actively in the decision making process is a core aim of Local Agenda 21 and seen as essential for the move towards sustainability. For further information refer to 'Agenda 21'.

- **Mentoring**
  Mentoring provides individuals and groups, who are grappling with sustainability, with the support and understanding that they need to engage with this concept. The process offers mentoree centred, collaborative support, and space, to engage people in critically examining opportunities for change within their home, community or workplace. Valuable and important components of the mentoring process are dialogue and sharing of information amongst colleague networks and the creation of opportunities for relevant change to the mentoree. For further information please see Volume 3 of this series.

- **Multi-sectoral**
  Multi-sectoral refers to the involvement of stakeholders from more than one discipline or sector. If a program has stakeholders from more than two sectors then it can be said to be multi-sectoral. For further information see also 'Sectors'.

- **National Environmental Education Council**
  A key element of the Australian Government's National Action Plan for Environmental Education is the establishment of the *National Environmental Education Council*. The Council is a non-statutory body comprised of people from a variety of sectors who provide expert advice to the Government on Environmental Education issues. A key goal of the Council is to raise the profile of Environmental Education and, in particular, how Australians can move beyond environmental awareness to informed action.

- **National Strategy for Ecologically Sustainable Development**
  Australia's '*National Strategy for Ecological Sustainable Development*'[e] was developed in 1992 and endorsed by the Council of Australian Governments. The strategy identifies core objectives and guiding principles and sets out the broad strategic framework to guide government policy and decision-making. These objectives and principles have provided the underlining framework for several Australian and State government policies and legislations, such as '*Australia's Oceans Policy*'[f] and the '*Western Australia State Sustainability Strategy*'[g]. However, the *National Strategy* has not been as influential as anticipated. Critics point to how the Strategy did not allow for a robust solution to Australia's environmental problems and that the Ecological Sustainable Development process had a more economic/pro-development focus[h] with less focus placed on the fragile environmental balance or scale of social change needed[i]. The implementation of Ecological Sustainable Development has been challenging due to varying political agendas, institutional barriers and different interpretations of environment resource 'value'[j].

- **OECD ENSI**
  Environment and Schools Initiatives (ENSI) is an international network of educators from 14 member countries across the OECD and under the umbrella of OECD CERI. *ENSI* cooperatively undertake Environmental Education research and development programs particularly focusing on activities related to sustainability. *ENSI* employs a participatory approach which involves government agencies, schools, teachers, teacher trainers and students in research with a main focus on action research and development. *ENSI* also promotes international exchange, understanding and collaboration amongst network members and with other international organisations and makes policy recommendations when appropriate. *ENSI* supports educational developments that promote environmental understanding, active approaches to teaching and learning, and citizenship education, through research and the exchange of experiences.

- **Participative Inquiry**
  Participative Inquiry is the engagement with, and deep exploration of, sustainability questions, which stimulate new ideas for further interrogation and action. Participatory inquiry offers a new paradigm for understanding and engaging with community as well as organizational change. As a methodology, it is useful for exploring the dynamics and characteristics of systems. It brings people together, enabling cooperation and strengthening the relationships which support change. It requires inquiry based learning, collaborative practice and the free, creative interrogation of ideas.

- **Participatory Action Research (PAR)**
  Participatory Action Research is a collaborative process in which a group of co-researchers combine inquiry, critical reflection and action. A main component of PAR is that there are no 'experts' and as such all of the group are involved equally in the processes of inquiry and problem solving. PAR seeks to breakdown the traditional hierarchies and power structures experienced between researcher and researched. It is the participants or 'researchers' that have control and ownership of the process, direction of research and ultimately the use of the results.

  The process has been used as a form of group Action Research that encourages more open communication and discussion amongst colleagues regarding a specific task or issue. The group Action Research process invites deeper critical reflection and more effective action. For further information refer to 'Action Research'.

- **Sectors**
  When we mention sectors within this series it refers to the specific bodies of people and organistions who are grouped together due to common interests and working areas. These include sectors such as community, business and industry, school as well as further and higher education sectors.

- **Social Capital**
  Social capital represents the degree of social cohesion which exists in communities. It refers to the processes between people which establish networks, norms, and social trust, and facilitate coordination and cooperation for mutual benefit.

- **Stakeholders**
  A stakeholder is a person or group with an interest in an activity and or outcome. It is a term frequently associated with sustainable development. Stakeholders may be internal or external to a group or organisation and may be direct or indirect beneficiaries of an activity or outcome[k]. Sustainable Development promotes cross-sectoral stakeholder engagement in the planning and implementation of actions.

- **Strategy**
  A strategy is a long term plan with a defined scope that identifies: measurable objectives; key actors and target groups for the achievement of outcomes aligned with its declared vision.

- **Sustainability Focused Organisational Learning (SFOL)**
  The term 'sustainability focused organizational learning' has been used to describe the experience of companies that are attempting to pursue sustainability or the triple bottom line while making substantial changes to their organizational cultures. For further information refer to 'Learning Organisation'.

- **Sustainable Development and Sustainability**
  The idea of sustainability owes a great deal to the United Nations which in 1983 set up the *World Commission on Environment and Development (WCED)* and promoted quality of life for present as well as future generations. The key goals of sustainability are to live within our environmental limits, to achieve social justice and to foster economic and social progress.

Issues such as food security, poverty, sustainable tourism, urban quality, women, fair trade, green consumerism, ecological public health and waste management as well as those of climatic change, deforestation, land degradation, desertification, depletion of natural resources, loss of biodiversity and terrorism are of primary concern to sustainable development.

The issues underlying 'sustainable development', or 'sustainability', are complex and they cannot be encapsulated within the diplomatic language and compromises. Sustainability is open to different interpretations and takes on different meanings not only between cultures but also between different interest groups within societies. Sustainability embraces equality for all, and for this reason a key aim of sustainability is to enable multistakeholder groups to define their vision of sustainability and to work towards it.

- **Systems Thinking**

Systems thinking is a type of thinking methodology based upon a critical understanding of how complex systems, such as environments and ecosystems, function by considering the whole rather than the sum of the parts. Systems thinking provides an alternative to the dominant way of thinking, which emphasizes analysis and understanding through deconstruction. In comparison, systemic thinking offers a better way to understand and manage complex situations because it emphasizes holistic, integrative approaches, which take into account the relationships between system components and works toward long-term solutions critical to addressing issues of sustainability. Systemic thinking offers an innovative approach to looking at the world and the issues of sustainability in a broader, interdisciplinary and more relational way. Closely related to holistic and ecological thinking, systemic approaches help us shift our focus and attention from 'things' to processes, from static states to dynamics, and from 'parts' to 'wholes'.

- **Triple Bottom Line (TBL)**

Triple Bottom Line is an expanded baseline for measuring performance, adding social and environmental dimensions to the traditional monetary yardstick. Reporting on the TBL is based on the premise that by monitoring and reporting social, economic and environmental performance, organisations can better prepare for future challenges and opportunities, including those traditionally considered intangible, such as reputation.

- **UN Decade of Education for Sustainable Development**

In December 2002, resolution 57/254 was adopted by the United Nations General Assembly establishing the *UnitedNations Decade of Education for Sustainable Development (2005-2014)*. The Decade is a culmination of the momentum towards sustainability generated by the Earth Summit, '*Agenda 21*' and the *WSSD* and presents an opportunity to focus world attention on learning for sustainability across the globe.

The United Nations Decade of Education for Sustainable Development aims to:

- promote education as a prerequisite for the movement to sustainable human societies;
- integrate sustainable development into education systems at all levels; and
- strengthen international cooperation towards the development and sharing of innovative education for sustainable development theory, practice and policy.

The Decade also offers opportunities for researchers, practitioners and education policymakers, who are often isolated from each other, to join in partnerships and to contribute to a collective and international imperative.

- **Values Clarification**

An educational approach employing a variety of strategies, which enables learners to clarify and critically examine their own values, particularly those, which are unconscious or inarticulate. This process helps learners uncover how culture, ideology, gender, socioeconomic background and religion shapes ones deepest held personal beliefs and values and assists learners in determining how ones own values coincide or conflict with others. Genuine engagement with sustainability requires us to understand how these factors shape our values and thus our view of the world.

- **World Summit on Sustainable Development (WSSD) and Johannesburg Plan of Implementation**

The *World Summit on Sustainable Development* was held in Johannesburg, South Africa from August 26 to September 4, 2002. The core goal of the summit was to review the progress made towards sustainability in the ten years since the 1992 *UN Conference on Environment and Development (UNCED)* in Rio. The Summit focus was on the status of the implementation of 'Agenda 21' by identifying further measures required to implement the Rio agreements, areas where more effort was needed and new challenges and opportunities.

The *WSSD* reaffirmed commitment to the Rio principles, the implementation of '*Agenda 21*' and to the development goals adopted in the '*UN Millennium Declaration*'. An outcome of the Summit was the production of the '*Johannesburg Plan of Implementation*', which is a targeted action plan containing more than 120 goals or targets for sustainable development in conjunction with other UN-sponsored principles.

The *WSSD* achieved a number of accomplishments, including:

- reaffirming sustainable development as a central element of the international agenda;
- focusing attention on the links between poverty, the environment and natural resource use through shared dialogue;
- negotiating concrete agreements from many participating governments to numerous commitments to implement sustainable development objectives;
- prioritising energy and sanitation issues
- according civil society views a prominent role; and
- boosting partnerships between governments, business and civil society.

Education was a cross cutting theme at the WSSD. The '*Johannesburg Plan of Implementation*' points to the social actions required to achieve sustainable development and to the role of education, capacity building and communication in achieving this goal. It recommended the adoption of the *UN Decade of Education for Sustainable Development* to further opportunities to action sustainable development.

[a] UNESCO (1997) Educating for a Sustainable Future: A transdisciplinary vision for concerted action, para.38.
[b] Adapted from http://www.deh.gov.au/education/nap/
[c] Adapted from PCE (2004, p.13)
[d] Adapted from PCE (2004, p.13)
[e] Commonwealth of Australia (1992)
[f] Environment Australia (1998)
[g] Government of Western Australia (2003)
[h] Dovers (1999); Harding (1998)
[i] ACF et al (1990) as cited in Harding (1998)
[j] Harding (1998)
[k] Adapted from Government of Victoria (2004)

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