

# **Education for Sustainability**

## **A Background Paper Prepared for the State Sustainability Strategy**

By  
Sandra Wooltorton

Edith Cowan University (South West Campus)  
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The Sustainability Policy Unit, Department of the Premier and Cabinet commissioned this paper, to provide background information to the State Sustainability Strategy and it does not necessarily reflect the views of the Unit or the Department.

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## ***Abstract***

This paper commends the extensive variety of creative, locally responsive environmental education activities and programs being implemented by schools and teachers, with the support of environmental groups and agencies, throughout Western Australia. It endorses the Western Australian Curriculum Framework and national and draft Western Australian environmental education strategies and action plans. It acknowledges Department of Education action learning support programs for teachers as well as structures that support local community engagement in schools. These provide a strong foundation for education for sustainability.

The paper points out the scale of the global and local environmental problems still to be faced. A tenfold reduction in consumption is required in industrialised countries such as Australia. Further, biodiversity loss needs to be reversed.

The paper recommends that the education systems and schools include education for sustainability as their primary purpose. At the policy level, it recommends that education systems develop a vision for a sustainable society and orient towards learning for sustainability. It recommends that education for sustainability be mandatory in Western Australia. Also at the policy level it recommends an overturning of the policy contradictions which result in school based limitations to education for sustainability and environmental action. At the schools level, it recommends a continuation of, and greatly increased locally initiated and developed educational responses to issues of biodiversity loss and unsustainable consumption. Finally, it proposes a four stage model for schools to refer to as a community development path for learning towards sustainability.

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Schools which do not educate *for* sustainability unavoidably authorise *unsustainability* as the status quo.

# 1. Introduction

This background paper addresses the formal school sector in Western Australia, which comprises kindergarten to year 12 education. Education for sustainability is generally regarded as learning how to make decisions and taking action that considers the long term future of the environment, the economy and social justice of communities (Fien, 2002). Environmental education, which in Australia has the goal of ecologically sustainable behaviours (Environment Australia, 2000, p. 3) is integral to education for sustainability. In this paper, the distinction between environmental education and education for sustainability is that the latter includes learning for social transformation through just, participative decision making. Western Australian school systems and schools are well positioned to take a central role in the creation of a sustainable future.

This paper aims to build upon the foundation created by the environmental education National Action Plan, the draft Western Australian Environmental Education Strategy and Action Plan and the Western Australian Curriculum Framework. The paper is based upon three basic notions:

- To address the environmental problems, there is a planetary need to transform the paradigm of education from business-as-usual<sup>1</sup> to sustainable education (Sterling, 2001, Capra, 1997).
- It is possible to *create* an alternative, liveable and sustainable future. The creation of a sustainable future requires action learning<sup>2</sup> for transformation, informed by perspectives gained through prediction, interpretation and critique. This requires the 'transformation of today', to create a transformed future (Inayatullah 2002, p. 7 - 21, 108,109).
- Creating the capacity for a sustainable future is facilitated in school communities which are oriented towards learning for sustainability through networks of partnerships (Wooltorton, 2002).

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<sup>1</sup> By the term: 'business-as-usual education' I refer to the assumptions and expectations of schooling which are underpinned by traditional notions of education. These assume the teacher will teach in a teacher centred classroom, in a school with the administration oriented to timetabled management of learning and children.

<sup>2</sup> Action learning is defined by the Department of Education (nd) as: "a participant directed and team-based professional development process in which teachers reflect on their experience and expertise and form partnerships with others in order to act on real school-based problems (an issue, challenge, opportunity or initiative)". It is a four part continuous process involving collaborative planning of action, followed by the implementation of the plan of action, the description of the action and finally, reflection on the whole process before commencing the next cycle.

### ***Current situation***

Western Australia has an extensive range of locally initiated, school based environmental education projects, some of which are partnership projects involving a range of support agencies. These include the Water and Rivers Commission (Ribbons of Blue), Greening Australia, WA (Adopt a Patch), Department of Environmental Protection (Airwatch and Waste Wise), the Water Corporation (Water Wise) and the East Metropolitan Regional Council. There are also a large number of individual teachers who work without agency support to implement small and important environmental education projects such as tree planting, beach care, bush restoration, recycling, energy consumption reduction and school garden related endeavours including permaculture, worm farming, composting and frog ponds. There are also schools which are working towards education for sustainability, such as Glen Huon School in the Bunbury District. Glen Huon School's project is to embed the principles of sustainability into the operations of the school (Nankervis, 2002).

The Western Australian Department of Education has a range of support mechanisms for sustainable school practices, such as the Local Management of Schools Network (LMSN, 2001) which supports school-community engagement. The Western Australian Department of Education also provides the action learning resources supplied by the Teacher Support Network as part of the Quality Teacher Program (TLS Network, 2002). These locally implemented projects, programs and support services, together with the Western Australian Curriculum Framework, the environmental education National Action Plan and the draft Western Australian Environmental Education Strategy and Action Plan, provide a good foundation for the further development of education for sustainability in Western Australia.

Although there are some excellent environmental projects in place, some teachers who were consulted for this background paper report that their efforts to implement environmental education are frustrated by timetable constraints and formal test requirements. Further, they comment that their schools and communities allocate low priority to environmental education. Some environmental projects are implemented as extra-curricular activities after school hours, and these teachers are prone to burn-out. Further, the projects often cease when the initiating teacher leaves the school. The basis of the problem for environmental education is a structural contradiction which underpins the task of schools. The structural contradiction is that the rhetoric of sustainability education exists in direct contradiction to the rhetoric of the business-as-usual approach. Rather than the creative, process-oriented, responsive, locally

managed problem-solving approach of sustainability, the business-as-usual approach is oriented towards standardisation and accountability measured by literacy and numeracy testing as goals-in-themselves. The consequence is retention of the status quo in many schools and a stifling of the potential for creativity and local response to environmental issues.

In its Geo-2000 report of 1999, the United Nations Environment Program (UNEP) stated that the two major causes of environmental degradation on the planet are excessive consumption by the minority of the world's population and the continued poverty of the majority of the planet's inhabitants. They state: "The present course is unsustainable and postponing action is no longer an option" (UNEP, 1999). Consumption in industrialised countries needs to be reduced on a tenfold scale.

A tenfold reduction in resource consumption in the industrialised countries is a necessary long-term target if adequate resources are to be released for the needs of developing countries. (UNEP, 1999)

With government support, Australian schools must face the huge task of educating for reduced consumption.

In general, Western Australia's biodiversity has been "depleted by short sighted planning and poor management" (Government of Western Australia, 2002, p. 1). The World Wildlife Fund has identified the South West Eco-region of Western Australia (approximately Shark Bay to Esperance) as the twenty fifth in the world's top two hundred identified hot spots. This means that the area has immense biodiversity values but is under serious threat. For example, of the once abundant wetlands of the Swan Coastal Plain surrounding Perth, up to 80% have been 'consumed' by rural fringe, urban and peri-urban development (WWF, nd). In partnership with their communities and local councils, Australian schools have the potential to develop practical responses to issues of unsustainable consumption and biodiversity loss. The UNEP (1999) states that: "trends towards environmental degradation can be slowed, and economic activity can be shifted to a more sustainable pattern".

There are many outstanding examples of individual and collaborative environmental education projects currently operating in Western Australia, and a good foundation exists for progressing education towards sustainability. However, the environmental conditions of Western Australia and in fact the planet strongly indicate that if we do not take them seriously and refocus our education systems and schools towards sustainability, we will have a future 'done to us', rather than a future we intentionally create. To assist with the task of refocusing



towards sustainability, this paper addresses the level of policy and the level of practice. The level of practice is the school and community level. To increase systemic capacity for sustainability, we need both levels in supportive dialogue.

## ***2. Issue analysis and description***

Key sustainability issues in environmental education are addressed in this section, firstly in the global and national context then in the Western Australian context.

### **Global and national context**

#### ***Policies towards sustainability***

Agenda 21, the intergovernmental environment and development agenda, recommended that nations reorient education towards sustainable development (UNEP, 1992). Some countries are intentionally working to achieve this goal. "An Agenda 21 for the Baltic Sea Region" is an example of an international cooperative agreement to commit to education for sustainable development. In May 1996 the Heads of Government of the Baltic Sea Region, which comprises Denmark, Estonia, Finland, Germany, Iceland, Latvia, Lithuania, Norway, Poland, the Russian Federation and Sweden framed a series of principles and values of international cooperation for development of an Agenda 21 commitment.

In January, 2002, the report with an action plan for implementation of [Agenda 21 for the Education Sector in the Baltic Sea Region](#) was accepted by the Ministers for Education. The overall goal for education was agreed as:

All individuals should have competence to support a sustainable development that meets the needs of the present without compromising on the ability of future generations to meet their own needs. Education for sustainable development should be based on an integrated approach to economic, societal and environmental development. (Baltic 21E, 2002)

The Baltic21E goal for schools is written:

The individual learner should have the knowledge, values and skills to be active, democratic and responsible citizens and to participate in decisions in individual as well as different levels of society, locally and globally, to contribute to developing a sustainable society. (Baltic 21E, 2002)

In reference to the sub-goals or criteria, Baltic 21E, 2002 states: "Ultimately, they are to guide the selection of proposed actions and contribute to transforming and making BSR [Baltic Sea

Region] sustainable." This reference to the Baltic 21E agreement is included to demonstrate an example of systemic commitment to the goal of reorienting education towards sustainable development.

In its Environmental Education Policy of 2001, the NSW Department of Education and Training (DET) recognises Agenda 21 as an internationally agreed route towards sustainability. The policy addresses curriculum, resources and grounds, and writes that: "Environmental Education is the responsibility of the whole school community" (2001 p. 5). In July 2002, the Government of NSW released an Environmental Management Strategy for the schools and TAFE Institutes sector. One 2002 - 2003 action priority is for Departmental assets and operations to become exemplars of environmental best practice, so that they can be utilised for learning and teaching activities by schools and institutes when appropriate (NSW Government, 2002, p. 4).

Environmental education in NSW is mandated through the Environmental Education Act - NSW 1999. The NSW Environmental Management Strategy provides a framework that encompasses the planning and reporting processes of all schools, TAFE Institutes and DET units. It allows for the development of a scheme which awards and acknowledges staff and students who make a positive contribution towards sustainability through environmental action (NSW Government, 2002, p. 2). At the time of writing this background paper, a "Criteria for Accrediting Sustainable Schools" is being developed (Smith, 2002). At this stage the intention is to address three dimensions of sustainability: curriculum, resources and grounds. It is proposed that each school address each of these dimensions through three sequential process phases for accreditation, being planning, implementation and sustainability. This reference to the NSW policies is included to demonstrate an Australian example of progress towards the goal of education for sustainability.

### ***Challenges for sustainability***

Sterling (2001, p. 27, 77) writes that internationally, the goal of reorientation of education systems towards sustainable development generally remains a serious challenge because of the modernist, neo-liberal, business-as-usual agenda in education. The business-as-usual agenda is supported by a belief that education is mainly preparation for economic life, which results in the narrow perception of schools as suppliers of graduates as 'material for jobs'. It emphasises competition, line management, standardisation and accountability, which are values that work in opposition to the cooperation, collaborative decision making, diversity

and responsibility values of sustainability. The business-as-usual approach to education results in a structural contradiction which is illustrated here:

Ecological View	Mechanistic View
Progressive Education	Business-as-Usual Education
Qualitative and quantitative measures	Standardised, externalised assessment
Transformative learning	Transmissive learning
Collaborative approach to activities	Competitive approach to activities
Creativity, problem solving, lateral thinking	Narrow, accountability-oriented thinking
Participative, democratic decision making	Hierarchically-oriented decision making
Emphasises local, bottom up requirements	Emphasises top down requirements
Path to sustainability	Path to consumerism

(Derived from Wooltorton, 2002 and Sterling, 2001.)

An emphasis on one side more than the other is unbalanced but an emphasis on business-as-usual causes a narrowing of education.

We are used to hearing our schools assailed by critics who want to know why ‘Johnny can’t read, Johnny can’t write’ and who call for a return to the basics’... But why do we stop worrying there?... why not worry that Johnny can’t dance, can’t paint, can’t breathe, can’t meditate, can’t relax, can’t cope with anxiety, aggression, envy, can’t express trust and tenderness?... that Johnny does not know who he is...? Let us admit that the basic skills have nothing to do with Johnny’s health, happiness, sanity, or survival, but with his employability. Whose interest, then, is Johnny’s education serving? (Roszak, 1981 in Sterling 2001, 43)

There are well documented ways in which the business-as-usual agenda causes a perception that education is only for economic outcomes (eg. Smyth, 2001 and Smyth and Shacklock,

1998). For example, there are accountability requirements for English literacy and numeracy<sup>3</sup>, which are valued as important economic skills, to the neglect of accountability for outcomes such as active citizenship, which is a practical commitment to the values and principles of ecological sustainability, democratic process and social justice (Curriculum Council, 1998, p.261).

Smyth and Shacklock argue that the business-as-usual agenda is based on a set of views on what schooling *ought* to be (emphasis given). They assert that the views are:

undebated, untested, have no empirical basis to them, are without foundation in terms of an established nexus with known forms of teaching, and *hold no hope for the creation of more socially just, tolerant, compassionate or egalitarian societies*. (Smyth and Shacklock, 1998, 135: my emphasis)

What are schools for? Whose interests do they actually serve? For sustainability, the purpose of education needs to be the development of a sustainable society (through the development of healthy children, adults and school communities who are able to actualise their full potential).

## **Barriers to achieving sustainability for this sector**

This section lists locally experienced barriers to sustainability, and describes them briefly. The following barriers were reported by teacher groups and student teachers.

- a) A perceived systemic orientation towards literacy and numeracy as the most significant outcomes of schooling. Systemic accountability through the standardised WALNA (Western Australian Literacy and Numeracy Assessment) for literacy and numeracy, causes school organisation and classroom teaching to be oriented towards teaching for literacy and numeracy as goals-in-themselves, rather than as skills for wholesome personal development and capacity for contribution towards a wholesome society.
- b) Structural issues, particularly at high schools including timetabling which limits teacher capacity to implement action-oriented, community based environmental education projects. Teachers who are dedicated to the outcome of ecologically sustainable behaviours often do the environmental education work as extra curricular activities, on top of their normal teaching duties. They report that they become ‘burned

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<sup>3</sup> See Western Australian Literacy and Numeracy Assessment (WALNA) in Education Department of WA (2000, 131-133).

out' and lose their enthusiasm for teaching. Further, they feel frustrated because they cannot model ecologically sustainable behaviours themselves because they are always too busy.

- c) A perception of environmental education as a 'low status' subject at many schools. Teachers who were consulted for this background paper report that environmental education "falls between the cracks" of Society and Environment and Science, with the result that environmental education and sustainability do not receive sufficient attention. Within the few high schools which specifically address environmental education in their timetables, environmental education is generally optional.
- d) Generally low levels of collaboration between school and community groups to achieve environmental education outcomes, with the frequent result that very important environmental projects are left unattended, or are completed without involvement of local schools, depriving the children of the opportunity for active citizenship in a meaningful context.
- e) Generally, little incorporation of local Aboriginal languages and bioregional concepts, skills and values into the curriculum. Several teachers who were consulted for this background paper expressed the view that until there is genuine local Aboriginal and non-Aboriginal reconciliation, there will be no genuine reconciliation with the environment either. To deeply understand the local environment requires genuine valuing of Aboriginal people, history, natural history, language and culture of the place.
- f) Schools utilities: School buildings, grounds, playgrounds, energy use, water use, waste disposal and facilities are often overlooked as sources of environmental education<sup>4</sup>.
- g) High usage of unsustainable school transport to and from school. In the past two decades, there has been a huge increase in the number of children who are driven to school, rather than walking, riding a bike or taking a bus. This is environmentally unsustainable and models ecologically unsustainable behaviour to children.
- h) School community lack of awareness of environmental education services and support. Often, teachers report that they have little or no knowledge of local agencies such as Ribbons of Blue or localised services that they may access.

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<sup>4</sup> New buildings and refurbishment of existing buildings are planned in consultation with the school community, taking into account learning community design requirements and appropriate construction methods (Phillips, 26/4/02).

- i) Generally insufficient teacher education, both pre-service and in-service, about sustainability and about the scope of sustainability which exists in the Curriculum Framework. This includes lack of knowledge of resources available and local agencies able to support teachers with environmental education matters. This criticism was also heavily directed at teacher educators.

Often, global environmental problems are not perceived by teachers or local communities as problems with local solutions. That is, environmental problems are considered to be someone else's problem for someone else to solve. One teacher summarised her perception of her colleagues' attitude like this: "The environmental crisis has not yet deprived us of any of our comforts, therefore we do not take any interest." In general, regular marketing messages promote established cultural habits of unsustainable consumption.

## **Key stakeholders in the issue and their roles**

Key stakeholders in environmental education in Western Australia, include the following groups and organisations:

### *§ The Department of Education*

The Department of Education provides government schooling in Western Australia. Its mission statement states:

The purpose of the Education Department is to ensure that all government school students develop the knowledge, skills and confidence to achieve their individual potential and contribute to society. (Department of Education, 2001, 15)

The Acting Director General wrote:

To meet the challenges of the new century, our schools must work in partnership with and be accountable to the community, and graduate students with an appetite for life-long learning and the skills to participate productively and responsibly in an informed and caring society. (Department of Education, 2001, 9)

URL: <http://www.eddept.wa.edu.au>

### *§ Commonwealth Department of Education, Science and Training (DEST)*

Together with non-government school authorities, the Federal, State and Territory governments share the role of identifying national priorities for schooling, ensuring consistency and coherence in schooling systems across Australia, and identifying strategies to

achieve these goals. The Commonwealth government provides significant Australia-wide funding and co-ordination for school education. DEST reports three key government priorities and activities on their website, including:

Outcome 1: Students acquire high quality foundation skills and learning outcomes from schools.

The strategic priority 1, outlined for this outcome, is:

Nationally comparable standards and reporting to drive improved learning outcomes for all students. (DEST, nd)

URL: <http://www.dest.gov.au/>

#### § *Environment Australia ( Commonwealth Government)*

Environment Australia coordinates and provides funding for environmental education that is of national significance. It provides an excellent range of web site based environmental education materials as well as environmental education programs and kits, including: “Environmental education for a sustainable future: National action plan”, released in 2000.

URL: <http://www.ea.gov.au/education/index.html>

#### § *The Curriculum Council*

The Curriculum Council of Western Australia produced the Western Australian Curriculum Framework in 1998, and sets curriculum policy directions. It develops and accredits courses of study and provides for assessment and certification of student learning. URL:

<http://www.curriculum.wa.edu.au/pages/council/council00.htm>

#### § *The State School Teachers Union of Western Australia (SSTUWA)*

The State School Teachers Union represents its members, who are teacher employees of the Department of Education, in the negotiation of employment and award issues and in dealing with industrial issues. With regard to sustainability, issues for the union are likely to arise from the changing nature of teachers’ work and the inclusion of community-based obligations. URL: <http://www.sstuwa.org.au/about/>

#### § *The Catholic Education Office*

The Catholic Education office, according to its website:

[G]ives advice and service to Catholic schools and implements the policy decisions of the Commission. It negotiates arrangements with governments and

other agencies and administers government funded programs. (Catholic Education Office, nd)

URL: <http://www.ceowa.perth.catholic.edu.au/about.html>

§ *Independent Schools Salaried Officers Association of Western Australia (ISSOAWA)*

Represents education staff in enterprise bargaining and dealing with staff industrial problems.

URL: <http://www.issoa.asn.au/>

§ *Association of Independent Schools of Western Australia (AISWA)*

AISWA supports, represents and promotes the interests of Independent Schools in Western Australia. URL: <http://www.ais.wa.edu.au/>

§ *Department for the Environment, Water and Catchment Protection:*

The Department for the Environment, Water and Catchment Protection provides a range of environmental education programs and services. At the time of writing this background paper, the “Environmental Education Strategy and Action Plan” is being prepared for release. URL:

<http://www.environ.wa.gov.au/>, <http://www.epa.wa.gov.au/>

§ *The Department of Conservation and Land Management (CALM)*

CALM provide a range of services, programs, materials and facilities for use in environmental education. They provide NatureBase, an extensive web site of activities, information and links as well as the Hills Forest and Wellington Discovery Forest Environmental Education Centres. Most Western Australian national parks provide educational services upon arrangement. <http://www.calm.wa.gov.au/schools/index.html>

§ *Schools and local school communities*

Schools design and implement educational programs commensurate with the Curriculum Framework and according to the guidelines and requirements of the system of which they are a part. Non-systemic schools implement the Curriculum Framework according to their own constitutions.

§ *Local councils and other local agencies, service providers and non-government agencies (NGOs)*

There is a huge range of local councils, agencies and non-government organisations which provide services to schools. Many local councils provide environment-related information or education activities for schools. Agencies such as Greening Australia coordinate



environmental education programs. Non-government organisations such as environment centres provide local environmental information and advice and sometimes, volunteers to assist with specific projects.

#### § *Universities*

Universities provide teacher education, both pre-service and in-service.

#### § *Industry*

Many industry groups provide funding or provision for environmental education. Examples include Alcoa's Tammin Landcare Centre and Iluka's Capel Wetlands Centre.

### **3. Existing action**

#### **Developments in education for sustainability**

Before reviewing existing actions towards sustainability in Western Australia, some background on education for sustainability is provided. Fien writes:

Education for sustainable development is an emerging but dynamic concept that encompasses a new vision of education... The international community now strongly believes that we need to foster – through education – the values, behaviour and lifestyles required for a sustainable future. With sustainable development now understood not so much a destination but as a process of learning how to think in terms of 'forever', 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 equity of all communities. Building the capacity for such futures-oriented thinking is a key task of education. (2002, 11, 12)

Learning for sustainability is facilitated in schools that engage in action learning, cooperative decision making, holistic education processes, and integrated community development with local community-school partnerships (Wooltorton, 2002). Importantly, these schools intentionally connect with and work to improve, restore or sustain the local environment in a way that is central to their activities. They share responsibility, have a shared vision and a sense of history, and honour the production of community-based culture. Sustainability education acknowledges the need to develop new ways of living, being and behaving. Capra (1993) describes the skills and understandings of ecological literacy as systems thinking, the practice of ecological values and knowledge of ecological principles. Ecological literacy is integral to sustainability education.

Education for sustainability requires the articulation of a new lived paradigm of sustainability (Sterling, 2001, Fien, 2002). It aims to transform the business-as-usual notion of education, which does not value ecological thinking or sustainability issues (Sterling, 2001, 13). Education for sustainability requires a change from transmissive learning to transformative learning. The essential difference here is that transmissive learning is 'instructive', and usually 'imposed', whereas transformative education is constructive and participative (Sterling, 2001, 34). With constructive learning, the learner constructs and owns the meaning of the educational experience.

Deep learning is required for paradigm transformation. Sterling (2001, 15) describes first order learning as adaptive learning, which leaves basic values unexamined and unchanged. Second order learning involves critically reflective learning, when we examine assumptions and values of first order learning. This is sometimes called metacognition, or learning about learning. The third order learning is the deep level, and enables the learner to see things differently. It is creative and entails a deep awareness of alternative worldviews and praxis.

This third order learning is the paradigm transformation level. Transformative learning is required at individual and whole society levels, towards a vision of "sustainable education and sustainable society in mutual and dynamic relationship" (Sterling, 2001, 51). Sterling (ibid.) comments that for this to occur, three paradigm dimensions are required: a vision (of philosophy and direction), an image (of core values and ideas) and a design (for realisation of sustainability).

## **Current Environmental Education Plans and Strategies**

The Commonwealth Government's Environment Australia released the "Environmental Education for a Sustainable Future: National Action Plan for Environmental Education" in 2000. Strategies which form the National Action Plan are comprehensive and aim to improve the profile, coordination and quality of environmental education activities and resources for schools and community organisations through provision of extra direction, professional services and professional development for teachers. The National Action Plan is summarised in Appendix One of this paper.

The National Action Plan is commendable because of the professional credentials of its foundations, councils and advisers, because of its capacity for authoritative direction, because it is a national coordinating body, because of its scope and simply because it exists. It

addresses to some extent the frustration experienced by environmental educators due to the perceived 'ad hoc' nature of the funding and provision of support services to the wide variety of activities being conducted.

Upon its release and implementation, the Western Australian Environmental Education Strategy is expected to achieve a similar purpose in our regional setting. The Western Australian Environmental Education Strategy<sup>5</sup> will tailor the National Plan to Western Australian contexts through a framework of policy and support. Objectives of the Western Australian Environmental Education Strategy and Action Plan, are:

- Objective One: Coordination and Integration
- Objective Two: Government Leadership
- Objective Three: Formal Education
- Objective Four: Building Partnerships with the Community
- Objective Five: Building Partnerships with Industry and Business (Government of Western Australia, 2002)

Objective three, formal education, is detailed in the Western Australian Environmental Education Strategy as:

To ensure that all students, in all forms of education, are provided with environmental education that develops an environmental ethic and an understanding of sustainability, as well as the knowledge, concepts, skills and values necessary to enable them to recognise the environmental impact of their personal and work choices, and to act to minimise those impacts. (Government of Western Australia, 2002, p. 18)

Key targets for formal education are:

- Support and resource the environmental education content across the K - 12 curriculum.
- Include environmental education as a part of all undergraduate Education degrees.
- Ensure that all vocational training and higher education courses and degrees contain a dimension of environmental education. (Government of Western Australia, 2002, 3)

The key outcomes for formal education are listed as:

- Awareness of sustainability and environmental issues is increased and commitment to action is also increased throughout the Western Australian community.

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<sup>5</sup> Still in draft form at the time of writing this background paper.

- Environmental education for sustainability is provided to all students in government and non-government schools from K - 12.
- Environmental education is included in all pre-service teacher education courses.
- Students in all undergraduate and post-graduate courses develop an understanding of sustainability.
- All participants in vocational educational and training develop an understanding of particular environmental responsibilities within their field. (Government of Western Australia, 2002 p.18)

## **The Western Australian Curriculum Framework**

The Western Australian Curriculum framework is seen by environmental educators as commendable. Falconer (2002) wrote: “Teachers are ingenious and with this more open curriculum, less prescriptive in its content, we can use any means available to us to promote ecologically sustainable behaviour.” The Western Australian Curriculum Framework, which ascertains the expected learning outcomes of all Western Australian children in Kindergarten to year 12, contains numerous outcomes pertinent to ecologically sustainable behaviours, particularly in the Society and Environment learning area. For example, the Active Citizenship learning outcome is:

Students demonstrate active citizenship through their behaviours and practices in the school environment, in accordance with the principles and values associated with the democratic process, social justice and ecological sustainability. (Curriculum Council, 1998, p. 261)

The Western Australian Curriculum Framework is supported by seven key principles. The seventh of these is titled: “Collaboration and partnerships” and incorporates a community philosophy into schools:

Education is the shared responsibility of students, teachers, parents, tertiary educators and the community. Successful implementation of the Framework requires a collaborative approach to planning by all concerned and collective responsibility for students’ achievement of the intended outcomes. (Curriculum Council, 1998, 17)

The Western Australian Curriculum Framework is a very significant document in the task of orienting the system towards sustainability. It is community oriented, innovative and forward thinking in content and its outcomes focus enables teachers to choose activities and topics in local areas that are relevant to children's interests and local needs. Its flexibility and general

orientation allow sufficient scope for achievement of the outcome of ecologically sustainable behaviours. Contributors to this background paper expressed the view that the Curriculum Framework should be more strongly oriented towards sustainability in its overarching outcomes, so that a higher priority is accorded to sustainability.

## **Local management of schools**

The path towards local sustainable community in Western Australian schools is already well marked. Karmel's (1973) report: "Schools in Australia" recommended the devolution of responsibility for government schools to the schools themselves, with increased community involvement in the operation of the school. Since then, the local management of schools<sup>6</sup> has been associated with the push for school improvement (Townsend, 1994). As a result of Western Australia's 1987 "Better Schools" report, all Western Australian schools were to formally create school decision-making groups comprising staff, students, parents and community representatives to authorise budgets and make policy.

In practice, the concept of community participation in the school underscores a massive change process, which has involved industrial, political and cultural issues. Participation is a rather nebulous notion. Some views of participation hold that organisations simply will not survive without hierarchical leadership, whereas social democratic theorists argue that people can learn participative structures and processes so that hierarchies are not necessary (Rizvi, 1995, 21). Holders of a social democratic view suggest that participation in decision making is an important collaborative learning activity that is fundamental for the generation of a compassionate, humane society. The social democratic view is part of the ecological paradigm that underpins learning for sustainability. The School Education Act 1999 (WA) mandates community participation in Department of Education schools in Western Australia.

The Department of Education's policy for the local management of schools aims to enhance school-community engagement (LMSN, 2001) and sets a framework for community-school environmental education coordination and most importantly, substantial meaningful environmental action. The Western Australian Education Department has established a Local Management of Schools Network (LMSN) which is available to all government schools. Its

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<sup>6</sup> 'Local management of schools' is also known as school-based management, school-site management, self-managing schools and school based budgeting (Estill et al., 2001, 15).

aim is “school improvement through local decision making, parent involvement and community engagement” (Education Department of Western Australia, 2001).

## **Action learning for transformation towards Sustainability**

A ‘transforming today’ approach to the creation of an alternative, sustainable future is realizable through action learning. Action learning is a process oriented cycle of collaboratively planning to act, implementing the action, describing the action and reflection on the action. It enables the intentional use of multiple ways of knowing through meaningful dialogue and assists with community building. Inayatullah (2002, 8) writes that in anticipatory action learning, the future is constructed through deep participation in process rather than content. This enables the future to be ‘owned’ by those engaged with the process. The action learning resources and direction supplied by the Teacher Support Network as part of the Quality Teacher Program (TLS Network, 2002) are valuable for teacher and community action learning for ‘transforming today’.

## **Examples of programs currently in use in school communities**

An extensive range of environmental education materials, kits, programs, services and support are in use in Western Australia. These include:

AirWatch - a school based air quality program.

Waste Wise - a school program focusing on reduced consumption and waste minimisation.

Ribbons of Blue - a school based water quality program.

Water Wise - a water conservation program for schools.

Bushrangers - a program involving students in protection of flora and fauna.

Greening WA - Adopt-a-Patch, and several programs focusing on remnant vegetation

Salinity Action Kit

Catchment Education through Community Catchment Groups.

Hills Forest and Wellington Mills Discovery Centres.

City Farm Education Centre.

Cockburn Wetlands Education Centre.

Gould League Herdsman Lake Education Centre.

Western Power World of Energy.

Green Corps (various).

TravelSmart Schools.

Clean Up Australia Schools.

Captain Clean Up.

Millennium Kids.

## ***4. Strategies for change***

These will be presented in two sections, the first being for policy makers and the second being for schools together with their communities. They are presented in two sections because school based decision makers decide on the manner in which the policies will be locally developed and implemented. For the reorientation of education toward sustainability, as per the Agenda 21 commitments, centralised systemic policies need to be clearly focused towards a vision of a sustainable society and education for sustainability. This legitimises and validates school improvement based upon intentional transformation towards sustainability.

### **For policy makers**

***Collaboratively create a vision of a sustainable society to which the education systems and local schools aspire.***

§ *Explanation:*

Sterling (2001, 79) writes: “transformation depends upon a vision informed by a clear philosophy”. It clearly communicates acknowledgment of environmental and social crises and systemic intention to act in response. The vision authorises system and school-based practices which are consistent with the vision.

Timetable	Body Responsible for Implementation
December 2003	Department of Education, Catholic Education Office, Universities and TAFE Colleges

***Review the mission statement and purpose of the education system, so that the system explicitly orients towards education for a sustainable society.***

§ *Explanation:*

Transformation towards sustainability will be facilitated when the Department of Education, the Catholic Education Office and the Independent Schools Sector announce that their purpose is to contribute towards a sustainable society. UNEP (1999) and numerous international statements and agreements have pointed to the significance of the role to be played by education systems in creating new patterns of behaviour towards the environment for individuals, communities and societies.

Timetable	Body Responsible for Implementation
December 2003	Department of Education, Catholic Education Office, Independent Schools Association, Universities and TAFE Colleges

***Devote one overarching outcome in the Curriculum Framework explicitly and solely to sustainability and sustainability education.***

§ *Explanation*

The Curriculum Framework is a key document in the transformation towards sustainability. Emphasis on sustainability as an overarching outcome will assist the task of reorienting the education system towards sustainability.



Timeline	Body Responsible for Implementation
December 2004	Curriculum Council

***Devolve responsibility for education for sustainability to the Department of Education, the Catholic Education Office and the Independent Schools Association.***

§ *Explanation*

Education providers need to oversee developments in sustainability education to ensure outcomes commensurate with sustainability targets. A Sustainability Education Unit strategically placed within the Department of Education would facilitate the coordination, implementation and accountability requirements of education for sustainability in government schools.

Timeline	Body Responsible for Implementation
December 2005	Department of Education, Catholic Education Office, Independent Schools Association, Department for the Environment, Department for the Environment, Water and Catchment Protection.

***Mandate education for sustainability through legislation.***

§ *Explanation*

To provide the mandate for education for sustainability it is proposed that new legislation be implemented (similar to the existing Environmental Education Act - NSW 1999). The proposed Act could be jointly administered by the Minister for the Environment and the Minister for Education. Monitoring the performance of those organisations in infusing

education for sustainability into the school curricula and community could be undertaken by the proposed Environmental Education Steering Committee<sup>7</sup>.

Timeline	Body Responsibility for Implementation
2005	Minister for Education, Minister for the Environment, Proposed Environmental Education Steering Committee

***Develop materials to support school community based development of a vision and design for education for sustainability.***

§ *Explanation:*

Designs for sustainability and education for sustainability enable transformative, action learning processes to be inclusive of the emergent properties<sup>8</sup> which arise spontaneously but unpredictably.

Timetable	Body Responsible for Implementation
December 2004	Quality Teacher Program, Department of Education

***Provide pre-service and in-service teacher education<sup>9</sup> in teaching sustainability education.***

§ *Explanation:*

Education for sustainability is underpinned by radically different ways of comprehending learning, teaching and human interaction with the environment and each other to that understood by the ‘business-as-usual’ society in which we live. Education for sustainability

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<sup>7</sup> The Environmental Education Steering Council is a recommendation of the draft Western Australian Environmental Education Strategy and Action Plan.

<sup>8</sup> Emergence describes the ‘living qualities’ which arise as a result of dynamic interaction within complex systems and genuine learning organisations (Sterling, 2001, 81).

<sup>9</sup> This is in addition to the Western Australian Environmental Education Strategy and Action Plan which referred to teacher education in environmental education.

requires teachers who are prepared for transformative education with the accompanying personal transformation required for in-depth comprehension and application of the ecological paradigm and the extent of change required in schools and society.

Timetable	Body Responsible for Implementation
December 2005	Department of Education, Catholic Education Office and Universities, Independent Schools Association

***Allocate funding to schools for school renewal programs which involve significant community participation in sustainability programs.***

§ *Explanation:*

Structures now exist within the Department of Education for the local management of schools to enhance school-community engagement (LMSN, 2001). This sets a framework for community-school environmental education coordination and most importantly, substantial meaningful environmental action. This program now needs a funding boost to enable schools time and resources to develop community participation structures and processes.

The action learning resources and direction supplied by the Teacher Support Network as part of the Quality Teacher Program (TLS Network, 2002) is valuable for teacher and community action learning for transformation, which is the basis of education for sustainability. This program also needs a funding boost to adequately support schools and teachers to undertake significant new activities and projects designed for sustainability.

Timetable	Body Responsible
December 2005	Department of Education, Catholic Education, Environment Australia

**Reconsider education standards accountability.**

§ *Explanation:*

One reason for the systemic over-balance towards literacy and numeracy as goals-in-themselves is the Monitoring Standards in Education (MSE) guidelines and the Western Australian Literacy and Numeracy Assessment (WALNA) as the standards driver. For sustainability, all learning areas are needed to support the outcome of ecologically sustainable behaviours. For example, creativity, active citizenship, cooperation, tolerance, the ability to care, high self-esteem and ecological literacy are highly valued for sustainability.

Timetable	Body Responsible
December 2010	Curriculum Council, Department of Education, Catholic Education Office, Independent Schools Sector, Commonwealth Department of Education, Science and Training, Independent Schools Association

**Plan for the demonstration of building and utilities sustainability in all education contexts.**

§ *Explanation:*

This applies to all buildings, gardens, utilities and transport associated with education. This is a significant way of demonstrating commitment to sustainability, and advocating for sustainability and educating by example.

Timetable	Body Responsible
December 2003 – December 2020	Department of Education, Catholic Education Office, Independent Schools Association

***Make the concept of ‘action learning towards sustainability’ a central, integrating idea in education planning and implementation.***

§ *Explanation:*

‘Learning how to learn’ and deep learning about sustainability are intrinsic to the process of education for sustainability. The action research, process oriented approach to transformation towards sustainability acknowledges that everyone has the potential and responsibility to change their practices in fundamental and far-reaching ways.

Timetable	Body Responsible
December 2003- December 2005	Department of Education, Catholic Education Office, Universities

***Appoint extra staff at the regional and local levels to support the development and school based implementation of education for sustainability.***

§ *Explanation*

New skills in education and environmental action will be required for transformation towards sustainability, and for school based professional development requirements.

Timeline	Body Responsible for Implementation
December 2005	Department of Education, Environmental Education Providers

***Dedicate one government secondary school and one government and primary school in each education district to the purpose of being an exemplar of education for sustainability.***

§ *Explanation*

A secondary school that is dedicated to sustainability in buildings, grounds, resources, curriculum orientation and community orientation, should be considered in each education

district as a learning and research resource for access by other teachers, students and community members.

Timeline	Body Responsible for Implementation
To open January 2005	Department of Education

## **For schools and communities: Ideas for transformation towards community based sustainability.**

These recommendations do not have timelines because they are ideas for implementation by local school communities at their own pace considering local conditions and circumstances.

### ***Consider the school a demonstration centre for sustainability.***

#### *§ Explanation*

Use experiential learning to promote and demonstrate aspects of sustainability through school gardens, buildings and playgrounds. For example, permaculture gardens which produce food for the children and the canteen, worm farms which recycle food scraps, frog ponds to restore natural frog habitats and a play ground that encourages connection with nature, are of educational benefit to the entire community. Children need to grow in natural, healthy environments to enable them to become eco-literate.

### ***Design the school to become the centre of a holistic, healthy community for 'learning towards sustainability'.***

#### *§ Explanation*

Holistic, healthy, healing communities develop through being envisioned, imaged and designed (Sterling, 2001, p. 51). They need to address education, health and safety issues such as:

- personal safety for walkers and cyclists so that these activities are safe in the community for all age groups;

- purity of air, soil, food and water for body health;
- emotional safety for children, staff and community members to ensure inclusiveness of all interests and cultures;
- genuinely cooperative decision making at all levels, to enable just, fair participation by all;
- constructive, participative education processes
- a toxic free environment in buildings and outside;
- community development and partnerships;
- action learning;
- sustainability, which needs to be structurally and processually embedded at all levels and in all activities.

***Develop creative, flexible, local solutions to issues created by narrow, rigid timetables and other local obstructions to experiential learning and integrated planning.***

§ *Explanation:*

There are a variety of local possibilities such as middle schooling and sub-school reorganisation that facilitate flexible, responsive timetabling.

***Work to increase participation by Aboriginal parents and community members in school based decision making and all school community activities. Cooperatively plan for the incorporation of Aboriginal perspectives into the entire curriculum.***

§ *Explanation:*

The inclusion of Aboriginality and Aboriginal perspectives in school should assist Aboriginal children to feel more welcome and 'at home' at school. It benefits all learners, in learning about the culture and natural history of their own community and in developing ecological literacy.

***Consider the school community as a 'design hub' for local planning towards the tenfold reduction in consumerism.***

§ *Explanation*

As established community focal points, schools are well placed to play a central role in the cultural change required to address consumerism. Schools, communities and households could be locally re-visioned so that as individuals purchase less equipment for households, they are able to access services and equipment through the school. Schools could be developed as facilities for coordination of equipment, local markets for crafts and other home produce, and gathering places for meetings. Schools may reinvent themselves as creative hubs of eco-villages.

***Network a group of local schools and community groups together to form an interconnected matrix of schools, community groups and individuals who are connected by learning towards sustainability.***

§ *Explanation*

Education for sustainability advisors will be required for local school networks. In addition, each school may have a nominated environmental education teacher, who will have extra DOTT<sup>10</sup> time to support classroom teacher programs. Environmental staff, whose role is local environmental coordination, should be appointed by the local councils.

## **Research and development required to help solve long term problems for sustainability**

***Research appropriate methods of teaching for reduced consumption in contexts where marketing messages are constantly reinforcing consumption.***

§ *Explanation*

Extensive research is required to help solve medium and long-term problems such as how to educate for change in consumption practices. The research should be implemented by university researchers and school based action researchers using action learning strategies such as cooperative inquiry, since education for sustainability research needs to be implemented experientially within the paradigm to produce outcomes that are applicable within the paradigm. It is suggested that each university campus network with a matrix of

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<sup>10</sup> Acronym: Duties Other Than Teaching.



local schools to foster school teacher research into the development of second and third order learning models of sustainability in Western Australia.

Timetable	Body Responsible for Implementation
December 2005	Department of Education, Universities, Health Department

***Research the issue of staffing of schools, and the changing nature of teachers' work. Consider the roles of associated staff such as gardeners, storekeepers and technology officers.***

§ *Explanation*

As schools change in focus and direction with the inclusion of communities and increasing ecological activities, together with extra teacher roles such as the facilitation of environmental action, the hours and activities conducted by teachers will change. Flexible work hours and flexible approaches to staffing at the local levels will be required.

Timetable	Body Responsible
December 2003 – December 2006	Department of Education, Western Australian State School Teachers Union, Catholic Education Office, Independent Schools Salaried Officers Association.

***Provide extensive learning and research opportunities in Teaching Sustainability Education for teacher educators.***

§ *Explanation:*

Research is required to determine the most effective ways of enabling student teachers and in-service teachers to learn how to facilitate, teach and be conducive of transformation towards sustainability.

Timetable	Body Responsible for Implementation
December 2005	Department of Education, Catholic Education Office and Universities

## ***5. Measuring progress***

Self evaluation, self-monitoring and self-reviewing by school communities is the appropriate form of progress measurement, since the paradigm is transformative and not transmissive or imposed. School teachers who were consulted for this background paper suggested an award system to acknowledge progress towards sustainability.

A four phase progression is recommended as a guideline, using a framework of action learning for transformation towards sustainability, so that school communities can be clear about their achievements as well as what lies ahead. Description of phase five will need to be devised by those already in phase four. This is because future creation will need to emerge within the action learning process of the paradigm of sustainability. Acknowledgment and awards should be the shared responsibility of the Department of Education and the Department of Environment, Water and Catchment Protection. The model integrates the dimensions of community and curriculum with school resources, grounds and buildings. It is put forward as a suggested starting point for development of the accreditation process as per action 4 of the draft Western Australian Environmental Education Strategy and Action Plan.

### **Phase 1: Basic Environmental Education**

Each class in the school implements environmental education according to the Curriculum Framework of Western Australia. Particular emphasis is paid to hands-on active citizenship projects specifically designed to find a creative solution to a problem. Examples include bush regeneration projects to restore degraded bushland, the creation and maintenance of frog ponds to address the problem of frog habitat reduction; worm farms to address the problem of food scrap disposal; paper making to address the problem of recycling paper waste; child-friendly peaceful playgrounds to address the problem of uninspiring school yards; can collection and depot delivery to address the problem of can waste; or water-wise programs to cut school down water use. All of these projects need to be for school community

demonstration. Aboriginal studies programs need to be integrated throughout the school curriculum.

## **Phase 2: Collaborative Decision Making to Incorporate Children and Community Members**

As per phase 1, with the inclusion of children in school decision making. Priority is given to the development of eco-literacy outcomes in children. A focus is the deliberate inclusion of community members into the school to participate in decision making and assist with the extension of the projects into the community. Conflict resolution strategies and processes for identifying and resolving issues of community disharmony are introduced. Food production from perennial and annual species is included. Attention is given to implementing critical literacy and practices for reducing consumption of non-recyclable items and items produced from non-renewable sources. Regular school environmental audit showing improvement at each audit. Aboriginal people, and all cultural groups in the community, are an integral part of the activities and decision making of the school.

## **Phase 3: Community Learning Towards Sustainability**

As per phase 2, with a school renewal program focusing on the school together with its community intentionally becoming a learning community. Processes such as action learning, cooperative inquiry and collaborative decision making are used to create the vision, image and design of the school, and progressively refine and create sustainable alternative approaches to school organisation and operation. Conflict resolution strategies and processes for identifying and resolving issues of disharmony are embedded. This phase also includes no-waste canteens as well as the design and implementation of sustainable food production and preserving. School community begins to operationally and organisationally implement support services for community transformation towards reduced consumption. Examples include the leasing-out of the school's lawn-mowers over the weekend as well as community use of school computers, videos, televisions and other resources during evenings and weekends.

## **Phase 4: Education for sustainability at an eco-village school**

As per phase 3, with the school creating itself as a sustainable learning community oriented towards the cultural development of holistic health and simplicity in lifestyle.

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## **7. Appendix One**

### Environment Australia (2000). *Environmental education for a sustainable future: National Action Plan*

The environmental education National Action Plan defines environmental education broadly, as:

...to encompass raising awareness, acquiring new perspectives, values, knowledge and skills, and formal and informal processes leading to changed behaviour in support of an ecologically sustainable environment. (Environment Australia, 2000 p. 3)

That is, the outcome of environmental education is ecologically sustainable behaviours.

Principles of environmental education advocated in the National Action Plan are:

Environmental education must involve everyone.  
Environmental Education must be life-long.  
Environmental Education must be holistic and about connections.  
Environmental Education must be practical.  
Environmental Education must be in harmony with social and economic goals and accorded equal priority. (Environment Australia, 2000, p. 3,4)

Summary of strategies:

- Implementing a national framework for environmental education activities (the National Action Plan)
- Raising the profile of environmental education [through the] National Environmental Education Council [and the] Australian Environmental Education Foundation [and by] Communicating the importance of environmental education.
- Improving the coordination of environmental education activities [through the] Australian environmental education web site, [the] Commonwealth, State and Territory environmental education network, Environment Australia Environmental Education Working Group.
- Improving the quality of environmental education resource materials, [by] The establishment of the Australian Environmental Education Foundation, [by] Upgrading Environment Australia's environmental education web site, [by] Undertaking more market research and evaluation of Environment Australia's own environmental education products, [by] encouraging more collaboration between the Commonwealth, State and Territories on environmental education programs and products.
- More professional development opportunities for teachers in the formal education sector.
- More integration of environmental education principles into mainstream education (including tertiary level education) and vocational training activities.

- Increasing resources available to community organisations involved in environmental education [through the] Environment Australia's grants program, [and the] National Heritage Trust Training Program.

The National Action Plan states that these strategies are starting points only, and includes longer term priorities as well, which are:

- Local Government
- Business and industry
- Environmental education resource centres
- Partnerships with Specific Sectors
- International Partnerships

Full detail of the plan is available at URL:

<http://www.ea.gov.au/education/publications/nap/index.html>