SUBMISSION IN RESPONSE TO ‘FOCUS ON THE FUTURE’

THE ENVIRONMENTAL ALLIANCE

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UNDERSTANDING SUSTAINABILITY

Chapter 1 – The importance of sustainability

There is a growing consensus that the current types and extent of human activity on this planet cannot be maintained in the long term. In addition to the irreversible damage that we have done to the Earth's non-human populations, it is now well accepted that Western industrialism as currently practised is unsustainable in human terms. There is simply not enough fresh water or arable land, for example, to support 6 billion people in the manner to which most Australians have become accustomed.

The Environmental Alliance Sustainability Focus Group welcomes the Gallop Government's commitment to the notion of sustainability. The Alliance acknowledges that the process of developing a Sustainability Strategy is a first for Western Australia and that it requires a long-term commitment from Government, business and the community.

We look forward to being a part of a change in governance that could well place WA at the forefront of the transition into the most significant human epoch since the Industrial Revolution. We commend the Government, in particular, for:

1. pursuing positive environmental outcomes alongside, and not at odds with, positive social and economic results;

2. its commitment to a reasonably comprehensive process of consultation; and

3. the establishment of a Sustainability Policy Unit.

The Alliance does, however, have a number of concerns and reservations about 'Focus on the Future', including:

1. the Government's definition of 'sustainability' does not, in itself, include goals for the process (see Chapter 2);

2. whether or not sustainability will be integral to all levels of Government decision-making (see Chapter 3);

3. whether the pursuit of sustainability will be adequately enshrined in legislation (see Chapter 4);

4. how businesses will be involved with the sustainability agenda (see Chapter 6);

5. how the community will be involved in decision-making (see Chapter 8);

It is perhaps worth placing additional emphasis on two further reservations. The pursuit of sustainability in WA will, in itself, be unsustainable if the State does not promote a cultural paradigm shift in the community, the private sector and all levels of government (see Chapter 7). Sustainability should be promoted as <u>the</u> way of life in the 21st century, not just a particular Labor Party initiative.

This means a new way of doing things – we can't promote sustainability while continuing to support developments that are fundamentally unsustainable.

In addition, claims that WA is moving toward sustainability will be unsupportable without community consensus on a system for setting and monitoring sustainability indicators (see Chapter 5).

Chapter 9 provides additional, general comments on 'Focus on the Future'. That chapter is followed by detailed responses to almost all of the questions posed in 'Box 3' of 'Focus on the Future'.

Implementing sustainability is fraught with challenges, but the challenges must be met.

Chapter 2 – The definition of sustainability

The WA Government adopted definition of sustainability: "Sustainability is the simultaneous achievement of environmental, economic and social goals", does *not* provide a clear explanation of the concept of sustainability. It is confusing and meaningless. What are the goals? The definition of sustainability itself should be a goal. We welcome acknowledgement that a more integrated approach to planning and decision-making is needed, however sustainability is more than this.

Fundamental to sustainability is the concept of reaching a state that is liveable now and can be viable in the very long term. That is of a society that lives within the means available to it; does not irreversibly erode the natural capital that it and future generations will rely on; and does not impact on the current liveability and health of the environment and of communities. This is implicit in the 1987 UN World Commission on Environment and Development definition:

> Development which meets the needs of the present without compromising the ability of future generations to meet their own needs *(UNWCED, 1987),*

and also in the Australian National Strategy for Ecologically Sustainable Development definition:

> Ecological Sustainable Development is development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends *(NSESD, 1992)*.

It is important that this meaning not be lost in any new definitions or interpretations of sustainability, because it provides the guidance for all other goals and objectives for sustainability.

Rather than creating new definitions of sustainability, it would be more useful to build on existing definitions to develop a sustainability policy framework that can assist everyone in being able to better understand and interpret what sustainability is, what achieving it will look like, and how we can achieve that. This means building on existing definitions and the already adopted Principles of Ecological Sustainable Development. It would be useful for example to develop a more detailed vision for what moving towards sustainability would look like, and to set out broad goals or objectives that would help achieve the vision.

In developing a sustainability policy framework the state of Oregon's definition of sustainability is worth considering:

> 'Sustainability means using, developing and protecting resources at a rate and in a manner that enables people to meet their current needs and also provides that future generations can meet their own needs.'
>
> '*Sustainability requires simultaneously meeting environmental, economic and community needs.' (our emphasis)*

This definition addresses a key element of sustainability: that is, the requirement to meet environment, economic and social *needs*. Needs are independent of government or business policies. Government or others set goals. Our goal should be to meet the needs – as in the Oregon definition.

It is clear from looking at global, national and local indicators and trends that on many counts we are not living in a sustainable way and the situation is likely to worsen unless we make significant changes. Issues like global warming, biodiversity, material consumption and poverty are significant threats to quality of life now and into the future, and structural changes will be needed to resolve them. Sustainability involves rethinking society and its development.

Looking at environmental trends and progress towards sustainability, David Yencken notes that:

> *"... faced with environmental and other imperatives, prevailing economic and other systems will need to change in the new century. Disturbances to natural systems are now becoming so great that only a dematerialisation of the economy, a dramatic reduction in energy and material use per unit of service, will meet the multiple goals of ecological, economic and social sustainability"*
>
> (Yencken, 2000: 3).

The strategy should acknowledge our current situation and the need for fundamental change. This change is both a challenge and an opportunity. Business as usual is not an option in the face of growing knowledge of the environmental, social and economic costs and implications of increased consumption, pollution, irreversible degradation of our natural resources and inequity. Sustainability offers a hopeful path, a new societal goal, one with a focus on meeting social and environmental needs, to replace the current overriding goal of achieving economic growth.

A key message that must be emphasised by the State Government through its Sustainability Strategy and elsewhere is, as quoted in the Consultation Paper:

> *The present course is unsustainable and postponing action is no longer an option* (Global Environmental Outlook 2000).

The ecological bottom line

Sustainability is about ensuring environmental, social and economic needs are met – it cannot be achieved unless all of these needs are met. As these needs are being met, the intrinsic worth of other species must be remembered, so that an ethical approach is developed over time within society.

One of the most distinctive parts of the sustainability agenda however is the explicit recognition that there is an ecological bottom line that provides an imperative for our decision-making. Sustainability is about addressing the precautionary principle as we attempt to meet vital human needs, and how we can equitably share the world's resources.

The Australian *Intergovernmental Agreement on the Environment* (1992), to which the WA Government is a signatory, defines the precautionary principle as follows:

> where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

The maintenance of essential ecological functions and structures is necessary to effectively apply the precautionary principle.

Sustainability is also about recognising that our human needs are supported and provided for by the natural processes on the planet and its natural capital. Natural capital includes all natural resources such as water, minerals, oil, trees, fish, soil, air, and all the living ecosystems, ecosystem services and biodiversity of the planet. (Hawken, Lovins & Hunter Lovins, 1999). If we can't protect and maintain our natural capital all other sustainability goals will not be able to be met.

Along with this recognition, is the acknowledgement that the natural capital of the earth is limited in it productive and assimilative capacities, and its level of resilience to disturbance and degradation. In other words, there are real limitations set by our environment that we must learn to live within if we are ever to achieve sustainability.

Ecological and social issues are not subservient to the economy, rather social, and economic planning must be placed within the constraints of our ecological systems. The economy should be a means of ensuring a just and equitable society that meets the needs of all people, within the constraints of our natural systems.

Economics therefore, needs to be rethought to achieve these goals and to take account of the value of our natural capital. We need to achieve an integration of our environmental, social and economic goals. The triple bottom line approach is not about balancing out (and therefore compromising) each of these goals, but finding win-win solutions that will provide for social needs without compromising our natural capital.

Currently, we are not living within these ecological constraints because we are degrading and running down our natural capital, instead of living off its excess capacity. At the National and State levels the *Australian State of the Environment Report 2001*(Australian State of the Environment Committee, 2002) and the *Environment Western Australia 1998: State of the Environment Report* (Western Australian Government, 1998) vividly describe this unsustainable use and management of our environment.

In an effort to provide "a practical set of design criteria that can be used to direct social, environmental and economic actions" the Natural Step organisation has developed a science and systems-based approach to organization planning for sustainability. (http:www///naturalstep.org (accessed 28/3/02)). As part of this approach it has developed four system conditions required for sustainability. These are:

In a sustainable society, nature is not subject to systematically increasing;

1. *concentrations of substances extracted from the earth's crust;*

2. *concentrations of substances produced by society;*

3. *degradation by physical means;*

and, in that society

4. *human needs are met worldwide.*

(http:www///naturalstep.org)

These system conditions, when fully explained, are a very useful science-based set of principles for guiding our decision-making with regard to sustainability. The Strategy should use these sustainability systems conditions to help explain sustainability.

Instead of adopting a new, rather bland and meaningless definition of sustainability, the Sustainability Strategy should build on existing accepted definitions, for example the core objectives adopted as part of the National Strategy for Ecological Sustainable Development (Commonwealth Government of Australia, 1992), to provide a more detailed Sustainability Policy Framework. This Framework should include a more detailed vision of what moving towards sustainability will look like, that could hopefully become a new inspiring grand project for society, to replace our current goal of 'achieving economic growth'. The Framework would also need to identify the dimensions or elements of sustainability and set out broad goals for each of these elements that would assist in interpreting sustainability down to a more practical level. Making explicit the ecological constraints that we must live within will be an important part of the Framework.

Key recommendations

1. The Strategy should adopt a more robust definition of sustainability (that adopted by the state of Oregon, for example), which addresses a key element of sustainability – the requirement to meet environment, social and economic *needs*.

2. The Strategy must highlight and address the need for fundamental change if Western Australia is to become sustainable.

3. The Strategy must explicitly recognise that there is an ecological bottom line to decision-making and incorporate the precautionary principle into all decision-making.

References

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Chapter 3 – The role of sustainability as a priority and a framework for government decisions

Achieving sustainability is the most difficult but also the most important challenge for all of humanity in the twenty first century. For Western Australia to meet this challenge, sustainability must become a touchstone concept at all levels of Government decision-making. Achieving sustainability should now become both an overriding goal and governing framework of Government. Sustainability should become the central objective of all sectors and all policies.

The sustainability agenda can provide a very useful framework for the State Government in achieving a more coherent whole-of-government agenda. It provides a wide range of principles by which government decision-making can be considered, and a powerful vision that can appeal to the broad community. It also provides an integrative framework that addresses all the key goals for our society and its governance, while also providing important guidance for setting priorities.

Government has a crucial role in making Western Australia sustainable. Referring to the sustainability agenda that it sets forth, the United Nations Sustainable Development Agenda 21 acknowledges in its Preamble that:

> "Its successful implementation is first and foremost the responsibility of Governments.
>
> While partnerships across all sectors will be crucial, the role of Governments in leading the efforts of moving towards sustainability is central."
>
> (United Nations Sustainable Development, Agenda 21, Preamble)

Moving towards sustainability requires rethinking the way we govern and make decisions. A whole-of-government approach to sustainability is needed. It is vital that the Strategy emphasises that the sustainability agenda is broad and cannot be confined to either environment portfolios, or to assessments at a project level. In addition, environmental issues need to be taken into account at the strategic planning and policy stage within all Government portfolios. David Yencken notes:

> "Since significant changes are needed in social and economic as much as in environmental policy, it will not be sufficient to leave environmental policy to one portfolio area of government. Many portfolios of government need to be involved. The only environmental policy stance that makes sense is a whole-of-government approach."
>
> (Yencken, 2000; p. 2)

Yencken goes on to propose a whole-of-government policy, which he calls a positioning strategy:

> "The whole-of-government policy proposed in this paper is a positioning strategy. By positioning strategy is meant a strategy that takes series of small, relatively uncontentious and inexpensive steps in many different portfolio areas to:

- collect key information not now available and improve the accountability and independence of data gathering, assessments and predictions;

- generate greater awareness of the society-wide issues related to environmental change;

- develop new knowledge and skill bases;

- develop cross-portfolio strategies and initiatives;

- start to change prevailing paradigms about the best ways of dealing with environmental problems and of taking greater advantage of economic and other opportunities available to Australian industries and the Australian economy; and

- accelerate change and by these means start to position Australian society most effectively for the 21st century."

  (Yencken, 2000; p. 17)

Sustainability requires a collective shift in individual actions and political choices, and as Stephen Dovers argues:

> "All collective efforts are mediated through institutions, and without institutional change we will not move purposefully toward sustainability. Although there has been much policy development under the banner of 'ecologically sustainable development' (ESD) in recent years in Australia, institutional change remains at the margins of public policy and administration."
>
> (Dovers, 2001; p. 1)
>
> "While encouraging institutional arrangements exist, they are insufficient to achieve an ecologically sustainable and humanly desirable future. Sustainability does not have parity with other policy fields, especially economic policy. It is marginal and fragmented across jurisdictions, government portfolios and agencies, sectors and issues, and over time..."
>
> (Dovers, 2001; p. 27)

A useful policy tool is the strategic environmental assessment (SEA) process. SEA facilitates the systematic analysis of the environmental impacts of proposed development policies, plans and programs. It enables early public participation and social discussion and allows for early identification of environmental impacts. SEA also facilitates the identification of cumulative and global impacts of governmental policies and programs that may not be apparent at project level.

The SEA of policies, plans and programs focuses on the source of environmental degradation rather than addressing symptoms or impacts at the project level. It also facilitates the design of sustainable policies and plans, providing for consideration of a

larger range of alternatives than is normally possible in project EIA. SEA also strengthens and streamlines project EIA by:

- prior identification of impacts and information requirements;
- clearance of strategic issues and concerns; and
- reducing time and effort to conduct EIA reviews.

Considerable work has been done by the European Commission on the development and use of SEA. See, for example, *SEA and Integration of the Environment into Strategic Decision-Making,* European Commission Contract No. B4-3040/99/136634/MAR/B4 Imperial College Consultants Ltd (ICON) May 2001. This and other reports and guidance can be found at http://europa.eu.int/comm/environment/eia/sea-support.htm.

Key recommendations

4. There must be a strong and explicit State Government commitment to the Strategy, and to the sustainability agenda generally.

5. A whole of government, integrated approach to sustainability must be adopted.

6. The Government must take a leadership role in promoting the importance and future benefits of sustainability.

IMPLEMENTING SUSTAINABILITY

Chapter 4 – The role of government structures and processes

As discussed in Chapter 3, the Government's role in the achievement of sustainability is essential – it must lead the way and demonstrate what can be done, legislate where necessary, restructure, coordinate across agencies and resource the process. Leadership must be provided in the first instance by the Premier, and then by the relevant Ministers.

Institutional reform will be necessary to achieve sustainability, including with the establishment of a Sustainability Commission. Existing pieces of legislation will need comprehensive review and amendment, and Government agencies will need to change the way they operate.

The Government should also lead the way on sustainability by using its considerable purchasing power to ensure that its agencies are meeting environmental best practice and supporting sustainable businesses. See page 61 for more detailed comment on how the Government could be using its purchasing power.

Indicators

Developing sustainability indicators is a crucial strand of the Government's implementation of its sustainability agenda. Indicators can perform a number of important functions to support these agendas. They can help measure and assess progress towards sustainability goals, assist with communicating ideas, thoughts and values, and in engaging the community. Sustainability indicators can also play a role in government decision-making processes and in re-focusing the business of government and its agencies onto the sustainability agenda. They can also bring transparency and accountability to policy-making and provide a basis for fine-tuning policies for optimum outcomes.

Sustainability indicators should to be developed and located within the context of a sustainability policy framework. Such a framework needs to identify the dimensions of sustainability, provide a vision for what sustainability is and what achieving it looks like. It should also make a clear statement of the Government's commitment to achieving this vision, and set out the broad goals or objectives that will be pursued to achieve the vision. It is only in the context of a sustainability policy framework that meaningful indicators can be developed. The indicators need to be selected or designed to measure progress against the specific sustainability goals that are adopted. The indicators are an integral part of a sustainability policy framework, but do not constitute that framework by themselves. The Århus Convention and the Earth Charter would provide useful references for the preparation of the framework.

Chapter 5 includes a more detailed discussion of sustainability indicators.

An administrative / legislative structure for assessing sustainability

While it is essential that all government agencies address sustainability, the Environmental Alliance believes that the most effective way to progress sustainability in WA is to give ultimate responsibility for co-ordinating and driving sustainability to a single agency.

We propose the establishment, via legislation, of an independent Sustainability Commission. The functions will include responsibility for:

- the provision of an overview of sustainability performance, similar to that performed by the Australian Competition and Consumer Commission;
- the provision of information on integrated assessment of proposals to Cabinet;
- auditing and reporting on performance of Government departments and agencies against sustainability indicators, targets and milestones; and
- assessment of sustainability.

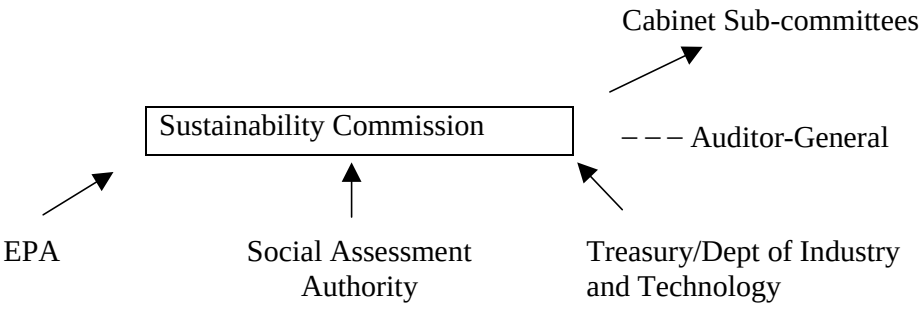
In its joint submission with the Environmental Defender's Office on the Review of the Project Development Approvals System, the Conservation Council of WA suggested an alternative proposal approval system that more fully recognizes that new administrative structures, backed by legislation, are needed to implement a true sustainable development decision making system.

The Environmental Alliance originally developed this model for "Sustainability Now", which was presented to the Government in September 2001.

Our basic position argues in favour of legislative backing for making sustainable development decisions.

We believe that the best way to implement sustainability policy, and for the Government to make integrated "triple-bottom-line" decisions, is through the establishment of a Sustainability Commission. Such a Commission should provide an overview of sustainability performance similar to the role performed by the Australian Competition and Consumer Commission.

We see this proposed Commission as having an independent relationship to Government that would be similar to that currently held by the EPA. However, in relation to decision-making, we see it as sitting "above" the EPA in a fashion indicated by the figure below:



In this conception, evaluations of project and policy impacts would be made by three separate agencies, with integration being the responsibility of the new Commission.

The EPA would undertake environmental evaluation of projects and Government policies. No changes would be required to the Environmental Protection Act, or to the operating procedures of the EPA, to enable this to happen.

Social and economic evaluation inputs to the Sustainability Commission, however, would require some additional administrative innovation.

Arguably, little change would be required to enable Treasury and / or the Department of Industry and Technology to fulfil an economic evaluation role, although there may be a need for it to develop skills in the newly advanced area of environmental/ecological economics.

No existing agency has the appropriate structure or skills to undertake social assessment of proposed projects and/or policies. It would therefore be necessary for the Government to establish a Social Assessment Authority with a similar remit and structure to the EPA. The new Minister for Community Development has already raised this possibility.

Two final points in relation to the structure presented in the figure are worthy of note. First, the proposed Sustainability Commission would provide information on integrated assessment of proposals direct to the relevant Cabinet Sub-committees to assist them in the making of executive decisions. Second, the proposed Commission would be required to undergo regular audits by the Auditor-General, in line with requirements imposed on other Government agencies.

Clearly, a new structure for sustainability decision-making such as the one proposed above would require legislative backing. Legislation would determine the make-up of the Commission, its powers, and its relationship to other Government agencies. Legislative backing would allow the proposed Commission to ***require*** inputs from other agencies and Ministers.

One of the concerns that we have about leaving sustainability decision-making to a bureaucratic unit, is that Government agencies can more easily ignore directions emanating from a small policy unit. Direction supported by law is bound to have a more pervasive influence. This is seen as essential to bring about the necessary depth of cultural reform required to make the transition to a sustainable society.

Our final reason for calling for legislative backing is that law is harder to change than bureaucratic structures. Eliminating a statutory Commission would require more political effort than disbanding a unit within a Ministry. Consequently, the ideals and procedures established by law are more likely to be secure in the long term, and survive changes of Government.

The Sustainability Commission would be the body responsible for co-ordination of the sustainability effort across government.

Government agencies

To incorporate sustainability within Government, each Government agency needs to:

- develop, with public input, its mission statement to include a commitment to sustainability;

- amend its corporate and business plans within one year of the Sustainability Strategy being approved, to incorporate the concept of sustainability and its implementation, including a commitment to public participation;

- prepare a sustainability assessment and action plan reporting on sustainability issues including key sustainability performance indicators for on going reporting;

- prepare an audit report against its sustainability plan, using a public reporting system and employing targets and milestones;

- improve understanding of the concept of sustainability at all levels within each agency. Sustainability must become part of staff training;

- prepare and implement purchasing policies to reflect sustainability principles; and

- introduce annual environmental performance reporting requirements and mandated targets in areas such as energy consumption, waste disposal, vehicle fuel efficiency and recycling.

Each department should have a dedicated resource person with responsibility for monitoring and facilitating the implementation of sustainability. Savings through sustainability measures such as energy efficiency would remain with the department's operating budget and be used to offset the costs of the resource person and the implementation of capital and other improvements to ensure sustainability.

Across Government

A number of measures need to be adopted across Government agencies, these should be co-ordinated by the Sustainability Unit in the first instance and then by the Sustainability Commission once established. The measures include:

- Assessment of the Budget for triple bottom line sustainability;

- Review by Treasury against sustainability indicators, with the cost-benefit analyses of Cabinet submissions to include externalities (i.e. Full cost accounting). An assessment framework needs to be developed to facilitate such assessment;

- The State Supply Commission should develop and maintain new contract and supply guidelines that identify accredited products and services, consultants, including Green power;

- A comprehensive review of all legislation, similar in scale to that undertaken as a result of competition policy, must be undertaken to incorporate sustainability principles where necessary and appropriate;

- Each Minister should establish a roundtable to allow all stakeholders to provide information and input on an ongoing basis, with regional roundtables formed where needed;

- Each Minister should report against progress in their area of responsibility; and

- Government must adopt Genuine Progress Indicators.

Resourcing the sustainability process

For the sustainability process to be effective and completed within the required timeframe, it will need to be adequately resourced in terms of staffing and other budgetary items. Such support would also demonstrate the commitment of the Government to the process.

Resourcing will primarily involve four key areas:

- § support for the Strategy development;

- § support for public participation;

- § support for the timely establishment of a Sustainability Commission; and

- § support for the financial and staff resources to effectively implement sustainability in a timely manner.

Resourcing public participation in the sustainability process

Public participation must be properly resourced. The Sustainability Commission will need to have dedicated staff and resources to facilitate and enable effective public involvement. Staff will need to be skilled in community development and participation forums, appropriate participation methods for particular communities of interest, and should be conducted by people skilled in facilitating community input (eg as in the successful Road Train Summit 5th May 2001).

Resources would be required to hold the initial public forums, ongoing regional forums (including sitting fees and travel allowances), the Environmental One Stop Information and Resource internet site (as outlined in the Government's election platform), education kits, and possibly a telephone hotline.

Resources to implement sustainability

Implementation of sustainability programs within Government, such as energy conservation and efficiency programs and recycling initiatives, has the potential for budgetary savings. The Alliance recommends that a proportion of the savings accrued are pooled as a resource to use for sustainability initiatives. Sustainability indicators should be used to assess the State Budget, enabling an analysis of each agency's

programs and the identification of savings due to sustainability implementation. Agencies that are successful in implementing sustainability initiatives should be rewarded by retaining savings accrued through the implementation of sustainability practices, while others that are less successful should be penalised through not being able to access the savings generated by more efficient and sustainable departments.

Awards could be made available for programs that exhibit best practice in a particular sector (e.g. education, greenhouse emissions reduction, building design, etc.). Best practice examples and award winners could then be publicised through various media, such as the Environmental One Stop Information and Resource web site.

In these ways the public can become more involved in implementing sustainability, there is education on successful programs and budgetary resources from savings accrued (through implementing sustainability programs) are made available for sustainability initiatives.

Building stakeholder support for sustainability

Vital to the success of institutionalising sustainability is a sense of ownership of, and commitment to the sustainability process by government agencies, industry, commercial, and academic and scientific sectors. The keys to constructive participation are broad involvement in all stages of the process, education training and capacity building in sustainability and strong leadership by the Premier (see chapters 7 and 8 for more detail).

Key recommendations

7. A Sustainability Commission should be established via legislation.

8. There must be a comprehensive review (which should be overseen by the Sustainability Commission) of all legislation, to incorporate the principles of sustainability.

9. Each Minister should establish Ministerial roundtables involving all stakeholders.

10. Each Government agency should develop and implement a program to address sustainability.

11. The Government must commit substantial resources to developing and implementing the Western Australian Sustainability Strategy.

Chapter 5 – How to assess sustainability

Introduction

The term "assessing sustainability" implies making evaluative decisions. Making sustainable development decisions requires, at the least, an administrative / legislative structure inside Government to guide the process, and a set of techniques to help bureaucrats and politicians make decisions with economic, environmental, and social criteria in mind.

Our proposed administrative / legislative structure was outlined in Chapter 4.

Techniques for assessing sustainability

The Labor Party's pre-election policies indicated an intention to undertake "integrated" decision-making, meaning that Government decisions would be made according to environmental and social considerations, in addition to traditional economic concerns.

International experience indicates that making integrated decisions will require the development of new techniques / methodologies. These techniques are new because traditional Government decision-making has relied almost entirely on economic analysis and its accompanying technique known as cost-benefit analysis.

We believe that the Government has made a positive first step in establishing environmental, social, economic, and regional sub-committees.

However, we believe that this will only be innovative, and hence lead to change, if three preconditions are met:

(1) the restructured Cabinet system applies to all significant Cabinet decisions, i.e. projects, policies, plans, programmes and legislation;

(2) there is enforced communication between the committees through a common Chair (either Secretary to Cabinet, Premier, or Deputy Premier), or through a meeting of Chairs; and

(3) there is an explicit commitment to:

- the concept that a healthy environment is a necessary precondition for economic and social goals;
- achieving outcomes that are successful for all three aspects of the triple bottom line; and
- the idea that if a "win-win-win" outcome is not possible, there is a weighting of goals to reflect the above pre-condition of a healthy environment .

The only preconditions that need further explanation are (1) and (3).

Clearly, not all proposals presented to Cabinet will have significant environmental, social and economic impacts. This implies that some kind of "sieving" process would be needed so that only significant projects, policies, plans, programmes, or legislation would be subject to the proposed integrated decision-making system.

In turn, a sieving approach suggests the need to establish a set of "benchmarks", "performance targets", or "indicators". The Premier has previously announced his intention to establish a community-driven indicator system, based on the Oregon approach. In the short term, however, there is a growing range of sustainability indicators already in existence in WA. These have been developed for the State of the Environment reporting system, and for the internal needs of Government agencies.

Applying the indicators brings us to the third precondition. Significant Cabinet decisions are made on projects, policies, and legislation. Different procedures will be needed for each of these decision types as outlined below.

Projects

Projects that come before Cabinet tend to be large and with some significant public sector nexus. They will either already have been processed through the environmental impact assessment (EIA) requirements of the *Environmental Protection Act 1986,* or they will be dealt with by Cabinet and an approval made contingent on successful transition through the EIA process.

If projects have already been through the EIA process before submission to Cabinet, they will have been given an initial "screening". Environmental screening involves comparing the proposed project against a list of benchmarks, as introduced above. These benchmark criteria consist of a range of questions underlying the following:

- the character of the receiving environment;
- the potential impacts of the proposal;
- resilience of the environment to cope with change;
- confidence of prediction of impacts;
- presence of planning or policy framework or other procedures which provide mechanisms for managing potential environmental impacts;
- other statutory decision-making processes which may provide a forum to address the relevant issues of concern;
- degree of public interest; and
- the past environmental performance of the project proponent.

These benchmarks are part of the ANZECC screening criteria, and the DEP section 38 filtering sheet.

For projects that have already been through the EIA process, Cabinet can ask the EPA to provide the screening details. The same process would need to be established for social issues, and for economic issues. The development of these new screening criteria could be the responsibility of the Policy Units within the Department of Premier and Cabinet.

For projects that have not been through the formal EIA process before being submitted to Cabinet, the abovementioned Policy Units could be charged with applying environmental, social, and economic screening criteria.

The outputs would be a summary set of environmental, social, and economic screening sheets, which would allow Cabinet to make integrated decisions on significant projects.

Policies and Legislation

New policies and / or legislation may require different decision-aiding tools. The development of techniques for assessing the impacts of policies / legislation is an emerging field, but there are a number of good examples in existence of "quick" approaches that could be adopted by Cabinet, and the Department of Premier and Cabinet's Policy Units (some examples include the Canadian Federal Government's 1999 Cabinet Directive on Environmental Assessment of Policy, Plan and Program Proposals, the Netherlands Cabinet "Environmental Test", the Danish Government process for Strategic Environmental Assessment of Legislative Bills, and the Asian Development Bank's new process for incorporating environmental issues into development planning).

Most rely on a combination of internal and external consistency checking, impact forecasting, and recording of outcomes.

The concept of assessing internal policy consistency has gained increasing currency in Europe, especially in relation to land use planning. The central idea is that “policy elements” contained within a policy may conflict with each other when the issue of environmental, social and economic benefit is examined. One of the main aims of “consistency analysis” is to make this potential conflict explicit.

Table 1 presents an example of a consistency analysis matrix produced for a hypothetical land use plan. It would clearly be possible to expand this matrix to include sub-objectives, but the disadvantage could be an unwieldy end product.

Table 1: Testing the consistency of policy elements (in this case, of a hypothetical land-use plan)

	Economy	Culture and language	Natural environment	Built environment	Energy	Pollution
Economy	–					
Culture and language	ü?	–				
Natural environment	ü?	ü?	–			
Built environment	ü?	ü?	ü	–		
Energy	x?	O	ü	ü	–	
Pollution	x?	O	ü	ü?	ü	–

ü, compatible; ü?, probably compatible; x?, probably incompatible; O, no relationship.

Using this approach, a policy can then seek to optimise its strategy by exploring whether its overall policy elements are inherently inconsistent, or whether a different expression of the elements can make them more consistent whilst still remaining true to their underlying aim.

Once internal consistency checking of a policy has been undertaken, it is then possible to examine compatibility ***between*** policies. The same matrix-based approach could be used, but axis entries would consist of the policy elements of two different policies. The outcomes of cross-policy compatibility analysis would result in either no change to a new or revised policy (because there are no obvious incompatibilities), or a revision to the policy elements of one, or both, policies to make them more compatible.

After having made any necessary revisions to policies as a result of consistency and compatibility testing, there is still a need to forecast the potential environmental, social and economic impacts of specific policy elements.

Table 2 shows an example of part of a policy impact matrix (focusing on environmental objectives) used to present the outcomes of impact prediction associated with a regional development plan.

Table 2: Example of a policy impact matrix for forecasting

Environmental Objectives →	**Global Sustainability**				**Natural Resources**				**Local Environmental Quality**		
Policy Elements ↓	Transport energy: Efficiency: trips	Built environment: Energy efficiency	Renewable energy potential	Rate of CO_2 fixing	Air quality	Water conservation and quality	Land and soil quality	Landscape and open land	Urban liveability	Cultural heritage	Public access to open space
To provide a network for open space corridors	•	•	•	ü	ü	•	ü	ü ?	ü	ü	ü
To concentrate residential development on an existing public transport corridor of the city	•	ü	•	•	x	•	•	ü ?	ü	ü ?	x
To concentrate residential development on a new rural "green" settlement	x	ü	ü ?	ü ?	•	ü ?	x	x	ü	ü ?	x

Legend:

•	ü	ü ?	x	?
No relationship, or insignificant impact	Significant positive impact	Likely, but unpredictable positive impact	Significant negative impact	Uncertainty of prediction or knowledge

Depending on the size of the matrix, it may be possible to include other aspects of forecasting, such as the geographic extent of the impact, its temporal extent, and its scale.

While the discussion up to this point has not mentioned the issue of alternatives comparison, it would be possible to adapt the policy impact matrix to include policy scenarios along one axis, and indicators on the other axis, with the alternatives' impacts on the indicators registered in the cells.

Impact evaluation involves considering whether the likely future impacts of a specific policy are acceptable. Table 2 provides an indication of how significance judgements might be included. Significance judgements can only be made where there are criteria against which to measure a forecasted impact. In Table 2, significance criteria can be developed for each of the environmental objectives. For example, given the importance

of lessening the amount of road transport for reducing greenhouse emissions, it might be considered that any policy element that has a negative impact on funding available for public or train transport would be unacceptable. This could conceivably occur if major road spending is planned or new residential developments that do not have sufficient public transport infrastructure are included as part of a Transport Policy. Significance criteria can be defined from sources such as established regulations and guidelines, carrying capacity, other statements of policy, and public opinion.

When enough information has been gathered to adequately define significance criteria, evaluation judgements can be made. Entering evaluative judgements into matrix cells is conceptually simple. However, making overall judgements about the environmental, social and economic significance of proposed policies will not necessarily be straightforward if matrices have a lot of information in cells and if those cells are measured in different units. In cases such as these, a quantitative method such as multi-criteria analysis or cost-benefit analysis may be appropriate.

This kind of policy assessment might have a number of outcomes. One way of managing these outcomes would be to establish a "policy record sheet", as devised for the British system of environmental appraisal of development plans. Table 3 provides an example of a policy record sheet template.

Table 3: Example of a policy record sheet

Policy No.	Original Policy Statement 1					
	Policy Revision 2					
	Policy Revision 3					
	1		2		3	
Environmental Sub-objectives	Original Policy Impact	Commentary / Action required where impact is significant	Revised Policy Impact	Commentary / Action	Further Revised Policy Impact	Commentary / Action
1						
2						
3						

Conclusion

The purpose of this section has been to show that techniques exist to allow high-level executive decision-making bodies such as Cabinet to make "quick" triple bottom line judgements.

Clearly all of these techniques would require refining, further development, and summarising by Cabinet's Policy Units before they could be applied by Cabinet or its sub-committees.

It is also worth mentioning that, where "win-win-win" outcomes cannot easily be obtained, simple techniques exist to allow Cabinet to "weight" triple bottom line indicators when applying them to specific proposed projects, policies, plans, programmes, or legislation again ensuring the pre-condition of a healthy environment.

Key recommendations

12. Techniques should be established for undertaking integrated assessment of all Cabinet submissions. This work should be produced by the policy units in the Department of the Premier and Cabinet, in consultation with the community, and based on experience gained in Europe.

13. The process for an integrated assessment of Cabinet decisions should include the following elements:

- **development and application of screening criteria against established benchmarks;**
- **assessing internal policy consistency ("consistency analysis");**
- **cross-policy compatibility analysis;**
- **development and application of policy impact matrices;**
- **development of significance criteria; and**
- **the use of a 'policy record sheet'.**

PROMOTING SUSTAINABILITY

Chapter 6 – The role of industry

Industry, including the service and primary production sectors, is a key player in achieving sustainability. Industry has the capacity to innovate and deliver products and services that meet the genuine needs of the community and achieve factor-improvements in the ratio of value generated per unit of net environmental impact (factor X), in order not to jeopardise the natural resource base on which society relies.

However industry is also one of the major players that is currently contributing to the fact that Western Australia's current path is unsustainable.

Transforming industry

Australia has a hot, heavy and wet economy. By this we mean that our exports are largely based on industries that use a lot of energy, producing extremely high greenhouse gas emissions (hot), is a heavy user of resources and materials producing high levels of waste (heavy) and uses lots of water (wet). The Australian economy produces more greenhouse gases per capita that any other OECD country, we use more materials per capita than any other OECD country and the second highest behind the USA in terms of per capita waste produced. Our water use is the highest of any other continent. Comparatively little value-adding is happening. Given Western Australia's resource based economy, WA likewise has a hot, heavy and wet economy and these trends are expected to be reflected in WA.

To be sustainable WA needs to move to a cool, light and dry economy, that is one that does not use a lot of energy and hence produces fewer greenhouse gases, uses less materials and produces less waste, without using large amounts of water. To achieve this the Government needs to take proactive steps to encourage the business sector to move towards more sustainable practices and encourage new industries.

The key to a more sustainable future is not limiting Western Australia's development, but instead transforming it. The Wuppertal Institute in Germany calculates that sustainability in developed countries requires a 90%, or factor 10 reduction in resource use. This efficiency level is way beyond our present economic system and change is needed.

Dematerialisation does not simply mean increasing the efficiency of particular operations – it means reducing the total mass of materials and energy used in our economy. The importance of the end use – and energy services – approach to energy use has long been stressed. Amory Lovins for instance points out that what we want is hot showers and cold beer – not oil and power plants. We want our needs satisfied in the most efficient and sustainable way.

This will mean reducing waste and closing the cycle in our manufacturing systems. It will mean designing flexible manufacturing networks so that companies can produce collaboratively what they cannot produce individually. It will mean reusing materials, finding uses for waste products, extending product life and using product redesign to facilitate these goals.

The role of the State Government

State Government leadership is required in order to drive the changes needed by industry and bolster private sector interest and commitment. The required leadership will cover all aspects of Government activity - strategic planning, policy development, legislative reform, implementation and the day-to-day operation of Government agencies. The Sustainability Strategy needs to address these areas and should seek to support private sector initiatives towards business sustainability.

At the strategic level, Government should scope the types of business activities that would support the transition toward sustainability. It also needs to include catalytic support for strategic R&D that is inspired and driven by sustainability goals.

While Government support and encouragement for the transformation of industry is critical it is also essential that the Government uses its power to legislate and regulate to ensure that industry meets the quality standards that are essential for sustainability.

Reforming subsidies and incentives

Government expenditure, programs, tax breaks and subsidies that contribute to environmentally damaging practices and excessive resource use must be withdrawn. Western Australia contributes significant amounts to subsidies that support 'hot, heavy and wet' industries – a recent example is the $350 million subsidy to infrastructure on the Burrup. Australia contributes $8.52 billion annually in subsidies to fossil fuel use – imagine what this level of investment would do for renewable energy development?

Western Australia should also seek to reform its taxes and charges to shift from taxing social 'goods' such as labour and innovation to taxing social 'bads' such as environmental pollution. Australia lags behind other countries in introducing this type of reform, in the European Union such reform has been a major driver in productivity and has been found not to cost 'jobs'.

> "The ecological tax reform, which we initiated last year, purses an important goal in the fight against unemployment: we are using all such revenues to reduce the cost of labour. The Government is returning the money it receives from eco-taxes to the taxpayers by keeping stable or even reducing their pension insurance contributions.
>
> Furthermore, reputable studies have proven that the ecological tax reform is giving significant impetus to a very important growth market: to the development of energy-saving technologies and production processes… Studies demonstrate that more than 200,000 new jobs have been created as a result of ecological tax reform."
>
> Hans Eichel
> German Finance Minister

There should be significant tax and other financial incentives for businesses and people investing in technology or capital expenditure that reduces resource use, waste and pollution. Financial and criminal penalties for environmental damage or negligently

risking environmental damage should be commensurate with the potential cost of the damage and sufficient to ensure appropriate corporate behaviour.

At the operational level, the State Government could seek to encourage and reward businesses that have taken steps towards environmental best practice and sustainability.

Financial assistance and advice, for businesses for the uptake of best-practice environmental technologies, for example for renewable energy or energy efficiency should be provided. To receive funding, these projects should involve adapting world-leading technology to local conditions or developing technology that is as good as or, preferably, better than that available elsewhere.

Government purchasing

Government agencies should at least seek to minimise their own ecological footprint, by adopting eco-efficient office operations, critically reviewing transport and travel, and inclusion of environment and sustainability criteria in government purchasing and contracting.

Such leadership and direction from the State Government serves two purposes. Firstly it rewards businesses that have taken leadership, as these will become the preferred suppliers to government, and encourages them to innovate beyond their current environment and sustainability best practices. Secondly, it makes crystal clear to those businesses that have not yet started their sustainable development journey, that environment and sustainability are no longer a whim of our times, but will stay and determine which businesses will continue to be successful in the future.

Key recommendations

14. The Government should review WA's industries to identify those that are 'hot, heavy and wet' and identify mechanisms to move them towards being 'cool, light and dry'.

15. Government needs to identify the market, institutional and other barriers preventing the realisation of the full potential of an economy based on sustainable industries and technologies.

16. Government should identify opportunities to develop 'cool, light and dry' industries, and support their development through incentives and other measures such as regulation and legislation where necessary.

17. **Financial incentives should no longer be given to ‘hot, heavy and wet’ industries.**

18. **Treasury should do an audit of subsidies given to all industries and developers.**

Chapter 7 – Education and a cultural shift

"It is a fundamental presumption of Agenda 21 that sustainable development is only possible if it is built by, through and with the commitment of local communities. *Enabling communities to become sustainable through their own actions ... whilst providing equality of opportunity to participate in decision-making processes ...* represents the greatest challenge facing human society in the 21st century."

Dr Roger Talbot, Towards the Ecological Society - a Toolkit for Community Learning. (http://www.arbld.unimelb.edu.au/envjust/papers/allpapers/talbot/home.htm)

Introduction

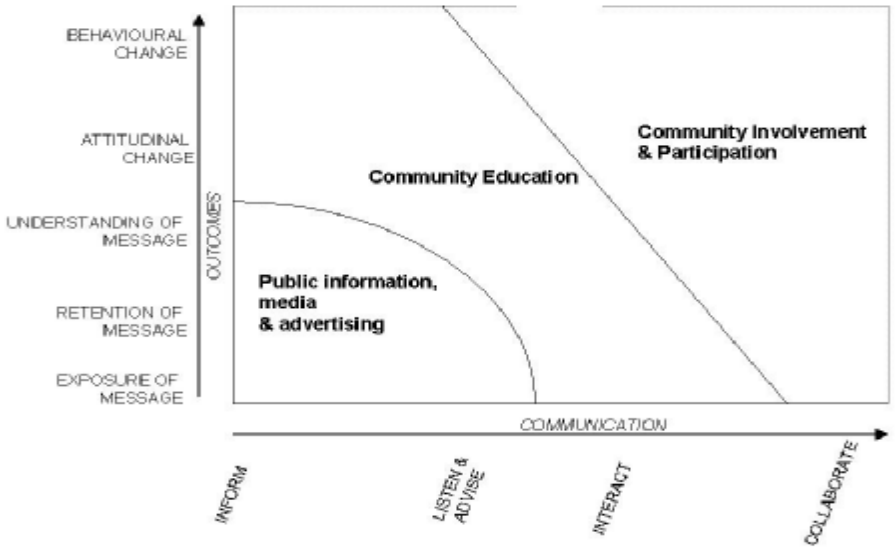
Any initiative to incorporate sustainability across Government and throughout society, ***must*** also explicitly address awareness raising, education and public participation. It will be impossible to institutionalise sustainable approaches and practices within state government, the private sector and the wider community, without simultaneously building understanding, support and capacity for sustainability outside Government and across Western Australia.

Awareness raising vs education vs involvement

Developing:

- information and awareness programs for the general community;
- more targeted and specific educational programs; and
- processes of public participation in the development and implementation of the sustainability strategy, are all elements along a continuum of public engagement in the movement towards sustainability, as illustrated in the diagram below.

Each of these approaches is useful depending on the desired outcomes, resources available and so on.



All of these approaches – awareness raising, community education and community participation – are essential tools for achieving sustainability, sitting alongside more traditional tools of regulation, policy and taxation.

Why are they essential?

- Raising awareness *of* sustainability and providing education *for* sustainability will be critical in changing the behaviour of individuals, organisations and governments, which in turn will be essential for a shift to a sustainable society;

- Capacity building and participatory processes are a fundamental part of the people / social / community aspect of sustainability;

- Sustainability is not a "Government" or an "Industry" or a "Community" endeavour or problem, it affects our entire society, and therefore our entire society should be aware, engaged and participating.

The Sustainability Strategy must acknowledge and reflect the importance of the three approaches (awareness raising, community education and community participation) and must ensure that these endeavours are resourced accordingly.

In addition, education for sustainability needs to be separated into:

- education *about* the concept of sustainability – an awareness lesson or theoretical discussion, a shorter term focus.

- education *for* sustainability – using education as a tool to achieve sustainability, a longer term focus with far greater implications (and challenges!).

Resources

There will never be enough resources, either financial or human, to develop and implement an ideal program of awareness raising and education. Therefore we need to tap into as many existing resources as possible. For example:

- Work with existing groups and networks as much as possible, in the hope of inspiring them to work with their members and networks.

- Audit and coordinate existing resources, tools and techniques that will contribute towards education and awareness raising for sustainability.

- Rather than seeking to always develop new programs, tools, resources, packages, look at what can be expanded or amended to be suitable for education and awareness raising for sustainability.

In many cases, changing a particular behaviour can result in benefits that cut across many areas of responsibility and interest. One small (but important!) example is the planting of local and native species in Perth's privately owned gardens. The benefits are numerous, and include: increasing local biodiversity, lowering water-use in the garden, numerous catchment impacts especially through reducing nutrient run off. Benefits are also social (e.g. building a greater sense of place in Perth metropolitan area) and economic (e.g. a more sustainable economy would promote locally sourced plants).

By taking a coordinated and partnership oriented approach to the promotion of "planting local and native species", each government department or community group which aims to influence this behaviour, need not develop a new campaign, resource package or program each time.

Raising awareness

This section could also be titled "developing a shared understanding of sustainability".

Currently, conversations about sustainability can potentially operate on a multitude of levels, with little shared frames of reference or shared understandings. A value with currency in popular public comment and debate is that sustainability interferes with economic development, i.e. it means sacrifices in terms of jobs and developments.

However, we need to recognize that a big proportion of people love and do not want to destroy our environment, and that community values are not always genuinely sought or reflected in government decision making. One of the first priorities should be research to identify the current level of understanding and current attitudes to sustainability. This research could also canvas community values and help in the development of the promised quality of life indicators.

We need to think about innovative ways to develop some shared understanding of what sustainability might mean for Western Australia.

Presumably a fundamental outcome of a Sustainability Strategy would be "the entire community of Western Australia is committed to and actively engaged in creating a more sustainable society". The challenge then is to establish what is the best way of

achieving that goal.

Given that at the moment, you could probably say that the community of Western Australia is, in general, disengaged, disenfranchised and distrustful of Government and other institutions – there is going to be a fundamental problem in engaging the average West Australian in a government-led program on sustainability, which is already not an easy concept to grasp.

Engaging and social marketing vs education

Terminology is important – perhaps we need to start thinking about and using 'engaging', not 'educating' – which as Les Robinson says, is a classically corporatist notion that implies that "we" have all the knowledge, that the knowledge is true, that the audience are empty vessels, and that our knowledge, once transferred, will fill them up with right thinking and right behaviour.

This also recognises that raising awareness does necessarily lead to a change in attitude and that a change in attitudes does not necessarily lead to a change in behaviour. For this to occur a series of steps are needed.

The social marketing approach

Knowledge / awareness – knowing there is a problem and an alternative.

Desire – imagining yourself in a different future.

Skills – knowing what to do**.** People learn skills best by seeing someone else do them. The best way to do this is to break the actions down into simple steps and use illustrations to make visualisation easy.

Optimism (or confidence) – Research has shown large numbers of the population are disabled from environmental action by their sense of isolation and powerlessness.

Facilitation – having outside support
People are busy with limited resources and few choices. They may need accessible services, infrastructure and support networks that overcome practical obstacles to carrying out the action. For many people this also includes the financial mechanisms to make it possible such as revolving funds, low/no interest loans, repayments through savings on bills, discounts thorough bulk purchasing etc.

If personal behaviour change is blocked by real-world obstacles (and it usually is) then all the communications on earth will be ineffective. The role of an 'education' strategy might therefore need to be expanded to involve the establishment of new services and infrastructure. This is why recycling has been relatively successful - we now have simple, quick, low-cost collection services which make recycling easy.

Stimulation – having a kick-start
We are creatures of routine. Even with all the knowledge, desire, good will and services in the world, there is still the inertia of habit to overcome. Consciousness is the tool human beings use to overcome habit, but we are unconscious most of the time. How can social marketers create moments that reach into our lives and compel us into

wakefulness?

So the stimulation could be an imminent threat (like a cost increase), a special offer or competition (based on self-interest), or, better still, some communally shared event that galvanises action (e.g. a telethon, a public meeting, a festival).

Feedback and reinforcement
A host of voices, situations and institutions daily compel us to act in undesirable, unhealthy and anti-social ways. These forces don't disappear just because we've run a campaign. Effective social marketing is about continuous recruitment and reinforcement of messages - with regular communications that report back to people on the success of their efforts and the next steps that are expected of them.
(see http://media.socialchange.net.au/people/les/social_marketing.html)

Another way of thinking about this is a "facilitative approach" on a society-wide scale. Just as individual workshops don't work or don't provide any learning opportunities for participants if the facilitator acts as a dictator and comes in to "lay down the law", neither will a process of engagement for sustainability work if it is seen to be a case of "government telling the community what to do".

The goal must be "Enabling communities to become sustainable through their own actions... whilst providing equality of opportunity to participate in decision-making processes".[1]

Other innovative approaches include:

'Learning communities' and 'learning circles'

Look for innovative educational methods. Locally based, community driven educational opportunities are extremely effective. 'Learning circles', 'discussion groups' and other community based approaches will be valuable in increasing the levels of discussion about sustainability in the wider community, and can be developed through existing community groups, neighbourhood learning centres and adult education courses.

The learning circle approach has been used successfully in the Aboriginal Reconciliation process and in the Swan River Action Kit (For further information see http://www.morethanjusttalk.com/learning/learning.html).

Learning circles are groups of 5-15 who meet to discuss, learn about and consider action on an issue or issues. A Sustainability learning circle resource kit should be developed. Sustainability learning circles could be established within existing community groups, or by new groups established specifically for this purpose.

Roundtables / seminars

Aimed at business, political and community leaders. Canada provides many examples of successful round tables for sustainability. Roundtables operate on the premise that it

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[1] Dr Roger Talbot, Towards the Ecological Society - a Toolkit for Community Learning. (http://www.arbld.unimelb.edu.au/envjust/papers/allpapers/talbot/home.htm)

is possible to create partnerships among people from many sectors, relying on consensus building.

We should establish a Round Table on Sustainability Education. This would produce a set of guiding principles for sustainability education and develop a Strategy for Sustainability Education. It could carry out a survey of community awareness and understanding of sustainability issues.

To avoid re-inventing the wheel, the Sustainability Education Round Table could also examine the wide range of excellent ideas being implemented elsewhere in Australia and overseas and identify their advantages and drawbacks.

Education for sustainability

In thinking about "education for sustainability" in Western Australia we need to separate formal and non-formal education.

Ideally we need a way of coordinating resources and activity in the sustainability education area between the many stakeholders and groups, which will hopefully result in an even spread of resources across priority sustainability education issues. Emphasis needs to change from provision of a certain educational resource by a certain provider, to identifying the overall educational needs and determining the best grouping of partner organisations to develop and deliver the resource.

In order to do this, we will need to be much more focused on developing partnerships for the development of educational resources and programs. One example of a good State Government / Local Government partnership is the NSW EPA Urban Stormwater Program, where the EPA provide generic educational materials and information to Councils to allow them to run their own locally relevant stormwater management education programs without substantial extra cost.

We also need to be aware of the resource intensive nature of always developing new resources. For 'sustainability education' the goal should be to weave a sustainability element through ALL relevant educational institutions, resources, packages etc.

Education needs to be focused on enabling people to become informed so that they can take up, in a democratic way, what they want and prefer for their future. It should include a critical and democratic process of reflection and action on our present unsustainable ways. Such education is part of a process that continues from primary school through tertiary levels and into adulthood, so that people are full participants in creating more sustainable futures.

Multicultural perspectives must be emphasised and reflected at all levels of formal and non-formal education and education methods used that are appropriate in different cultural settings eg Aboriginal communities.

Education for sustainability must also be central to all Government agencies and private sector activities and include Government-wide education and discussion opportunities on sustainability.

Formal education

Formal education is the primary and secondary school systems, as well as tertiary and vocational training (incorporating universities, higher education colleges, TAFEs, on the job training and so on).

School education

The new Curriculum Framework in schools offers far more flexibility for teachers to address sustainability issues throughout. However printing materials and distributing them in schools will not result in their widespread use – teachers ***must*** be supported by 'sustainability education providers' with good resources that are clearly linked into the curriculum, professional development opportunities, and practical learning opportunities for their students.

If students are to develop interdisciplinary, systems-based knowledge of the natural and built environments and the skills to participate actively in developing a sustainable society and economy, education for sustainability should be infused into more subject areas and at all levels. It also should be reinforced in post-secondary institutions and outside the walls of the classroom.

At school level the goals should be to engage students in learning about environmental issues that are relevant to their lives and their community; to provide students with new technologies and new sources of information to assist them in addressing local environmental concerns. Multicultural perspectives must be emphasised and reflected at all levels of formal and non-formal education.

Tertiary education and vocational training

'Unified learning, universally shared' should be the integrating theme of sustainability education. In a practical sense, knowledge partnerships among all scholarly disciplines and all societal institutions must be forged.

We need to work with universities and other higher education institutions to maximise the integration and coordination across these institutions. Higher education can no longer be compartmentalised or specialised in order to find solutions to complex, multifaceted problems related to our society living sustainably.

Universities should provide the knowledge, skills and values to enable students to live and work sustainably. They must also play a lead role in education, research, policy development, community outreach and support. The process of education must be active, with real world problem solving both on the campus and in the community.

Non-formal education

This includes education or community awareness programs run by NGOs, government departments, Local Governments, voluntary organisations, community groups etc. We need to be mindful about the different approaches and techniques suitable for sustainability education within different sectors of the wider community. For example education programs designed *by* or designed *for* the general community, active members of community groups, State Government employees, Local Government

elected members and employees, and industry, will all need to reflect the particular requirements and aspects of these groups.

There are a huge number of existing institutions, programs, groups and networks that could be encouraged to take part in awareness raising and educational programs for sustainability. For example:

Museums / Scitech / Zoo

The Western Australian Museum, with over a million visitors a year, could be encouraged and supported to develop sustainability programs in conjunction with government and industry. It could also be the focus for schools education programs.

Neighbourhood learning centres

Community Neighbourhood Learning Centres are friendly informal places where community members meet for a variety of activities at a minimal cost. They each reflect the needs of their own community, running courses, workshops, discussions, displays and social events. Most tutors are local volunteers. Many Centres are self-funded and members of the community are encouraged to help in the organisation, management and use of their Centres.

There are at least 50 such centres in the Perth metropolitan area, all of which could be partners in the process of raising awareness and educating for sustainability.

Resources

There is an enormous amount of resources for sustainability education available, including on-line resources. The list below is just a tiny fraction of what is available.

Second Nature: education for sustainability

Dedicated to accelerating a process of transformation in higher education. We guide and nurture these institutions in their quest to make sustainability an integral part of the institution and to help expand their efforts to make human activity sustainable.

http://www.secondnature.org

Teaching and Learning for a Sustainable Future: a multimedia teacher education programme

The programme contains 100 hours (divided into 25 modules) of professional development for use in pre-service teacher courses as well as the in-service education of teachers, curriculum developers, education policy makers, and authors of educational materials.

http://www4.gu.edu.au/ext/unesco/index.htm

Learning for a sustainable environment

http://www.ens.gu.edu.au/ciree/LSE/INDEX.HTML

Key recommendations

19. The Strategy must acknowledge and reflect the importance of three approaches: awareness raising, community education and community participation.

20. The Strategy should work with existing groups and networks as much as possible; audit and coordinate existing resources, tools and techniques that will contribute towards education and awareness raising for sustainability; and look at what can be expanded or amended to be suitable for education and awareness raising for sustainability.

21. The Strategy should find innovative ways to engage the community and to develop some shared understanding of what sustainability might mean for Western Australia, eg social marketing, 'learning communities', 'learning circles' and roundtables / seminars.

22. The Strategy should ensure that a sustainability element is present in *all* relevant educational institutions, resources, packages etc. This should include working with universities and other higher education institutions to maximise integration and coordination to enable us to find solutions to complex, multifaceted problems.

23. Education for sustainability must also be central to all Government agencies and private sector activities and include Government-wide education and discussion opportunities on sustainability.

Chapter 8 – The role of the community

As described in Chapter 7, the incorporation of sustainability across society and into Government decision-making processes requires building capacity, broad support and involvement throughout the community. The 'change of mind and heart' urged in the Earth Charter is a precondition for an environmentally sustainable, economically equitable and socially stable society.

This Chapter makes recommendations for promoting sustainability through community involvement. It draws on the approach outlined in Chapter 7 and work submitted earlier to the Premier. Please refer to *Public Participation for Sustainability* in *Sustainability Now* (Sept 2001) by the Environmental Alliance and available on the Conservation Council website at www.conservationwa.asn.au or from the Conservation Council of WA office.

The Chapter has two basic assumptions:

1. For WA to make the switch to sustainability there will need to be a fundamental shift in attitudes, perspectives and priorities, at all levels and in all sectors, so that sustainability becomes the dominant value informing policy and action; and

2. sustainability must be participative for all stakeholders to encourage ownership and investment, but also so it reflects and informs community wide values and aspirations.

As well as providing information on sustainable practices and seeking public input to the sustainability process, public involvement and education for sustainability aims to encourage a shift in values so that sustainable rather than unsustainable consumption patterns and lifestyles have status and currency. For example, this would mean that economic development focused around new and innovative ways of recovering resources is valued above the current resource extraction and unsustainable consumption of resources for production; yearly public transport passes have more value and status than a company car, water-efficient native gardens are highly prized, and the discussions outside the school gates and in the food markets include sharing tips on the best way to conserve energy or buy local organic food.

Public participation in sustainability / community involvement

There are three key components to the role of the community in the development and implementation of a strategy for sustainability – involving the community, engaging the community, and linking in and building on existing community initiatives.

Wide public participation in the sustainability process would have considerable benefit for the government and the community. The Government would be seen to be constructively engaging with the community. In addition, the Government's preferred Oregon model for state strategic planning emphasises community consultation.

Types of community involvement

In regard to community involvement, distinction is made between wide community involvement open to all members of the public and specialised input from community advocacy groups (such as the Conservation Council of WA, other Environmental Alliance member groups, and peak groups from the social sector and indigenous community). These groups have a high level of understanding of the policy process, are well connected with the communities they serve, and act as advocates for public interest values and perspectives. However this specialised input should be in addition to, and not instead of, wide community involvement.

Århus Convention

The right and need for the community to participate in decision-making is articulated in the Århus Convention (1998) on access to information, public participation in decision-making and access to justice in environmental matters (officially called the Public Participation and Environmental Decision Making Convention). The convention emphasises the need for the community to have assistance in order to exercise their rights, early participation in decision-making and reasonable time frames to allow for this participation. The Convention recognises that access to information and public participation in decision-making enhances the quality and the implementation of decisions. The convention is the product of the UN's Economic Council on Europe followed deliberations between Government, industry and non-Government organisations from 28 European nations. The government should follow the principles and processes outlined in the Århus convention in conducting public participation in the Sustainability Process. Drawing on Århus Convention, the following are proposed as principles to guide public and stakeholder participation:

- Development and maintenance of trust;
- Open and ongoing communication;
- Participation by all sectors of the community;
- Clearly stated terms of reference and objectives;
- Strong facilitation by independent brokers;
- Appropriate legal or policy frameworks;
- Forums, study groups, and workshops to increase shared understanding;
- Flexibility;
- Capacity building for government agencies and stakeholders;
- Making use of local environmental knowledge;
- Continuity of resources and effort;

- Participation of local people in conducting the process; and

- Regular review, monitoring and evaluation involving all parties.

Comprehensive and genuine public participation

To be effective, public participation must be comprehensive and genuine. It is important for the Government to acknowledge community input and demonstrate that contributions are heard and considered. This could be done via reports outlining how contributions have been incorporated, or why they have not been incorporated.

Public participation should target regions as well as communities of interest, eg Aboriginal communities, youth, elderly and ethnic communities. Those conducting the process should make sure that culturally appropriate methods of communication and involvement are used eg in Indigenous or ethnic communities.

Public forums should be held to provide input and provide avenues for discussion. However, it is important to remember that communities have a low tolerance level to processes that are about being seen to fulfil consultation requirements, rather than genuinely attempting to hear and understand community views and values. For this reason it is recommended that the Sustainability process engage existing community groups and processes for both informing the community of the process and seeking their input.

Ongoing, wide public participation

Further and ongoing participation could also take place via existing community groups and processes, the Environmental One Stop Information and Resource internet site (as outlined in the Government's election platform), a telephone hot line and by written submission. The web site could be interactive, with government feedback, policy and outcomes being published on an ongoing basis with scope for people to provide comment. Input could be fed into the Sustainability processes, such as the Roundtables for Sustainability, on an ongoing basis as it is received.

Ongoing general public participation in development and implementation of sustainability policy could also take place via regional focus groups formed following the initial forums. These could meet quarterly or bi-annually to review progress, receive government feedback and make suggestions for improvements. These forums would need to be properly supported, for example with sitting fees and travel allowances.

Public participation in the development and implementation of action and policy on sustainability

It is expected that community based, representative stakeholder groups (such as the Conservation Council of WA other Environmental Alliance member groups and WA Council of Social Service) would be involved at all stages of the development and implementation of Sustainability policy. This includes making submissions and commenting on interim assessment procedures, papers on sustainability policy and codes of conduct for government departments and participating in Roundtables for Sustainability.

The Environmental Alliance will continue to maintain the Sustainability Focus Group, which will be the medium for the conservation movement to provide input into the sustainability process. The Alliance will also participate in the process through the recently formed 'WA Collaboration' of non-government organisations.

Toolkits and research packages

As well as encouraging civic discussion, it will be important to research and disseminate success stories and look at other tools and activities. There are many examples of sustainable communities resource packages and toolkits available and it would be important for a detailed survey of this information to be undertaken – the contents, the outcomes etc. In the Netherlands, for instance, the National Committee for International Cooperation and Sustainable Development has produced a 'sustainability mirror' for local groups to focus on what sustainability at a local level comprises and test the sustainability of local government.

Campaigns

The British Government *'Are you doing your bit?'* campaign is designed to communicate elements of sustainability to the community, encouraging small but important behavioural changes. It focuses on four priority areas – transport, climate change / energy efficiency, water use and packaging and waste. The first year achieved measurable consumer recognition on a budget of £2 million. TV formed the main vehicle for 1999 / 2000, but it also uses press, posters, bus sides and radio.

Recognition and reward

Progress towards sustainability should be recognised and rewarded. There should be a range of sustainability awards covering all sectors, government, industry, schools, university, and community for innovative sustainability initiatives.

Research and co-ordination of existing initiatives

As well as the research to identify the current level of understanding and current attitudes to sustainability described in Chapter 7, current and planned relevant initiatives and resources also need to be identified and resources devoted to the co-ordination and publication of these initiatives and resources. The research should include identifying potential existing groups and processes suitable as an avenue for public participation and education.

Attention must be paid to the development of mechanisms to co-ordinate initiatives and processes to promote sustainability and complementary initiatives and processes, so that each builds on and reinforces the others.

Key recommendations

24. Public participation must be comprehensive and genuine. It is important for the Government to acknowledge community input and demonstrate that contributions have been heard and considered.

25. Public participation should target regions as well as focussing on communities of interest (eg Aboriginal communities, youth, elderly and ethnic communities). In the latter case, the Government should adopt culturally appropriate methods of communication and involvement.

26. The Government should look to engage existing community groups and processes for both informing the community about sustainability and for seeking their input, rather than set up yet a completely new process requiring time and resources.

27. Community-based, representative stakeholder groups (such as the Conservation Council of WA and the WA Council of Social Service) should be involved at all stages of the development and implementation of sustainability policies.

28. Public participation must be properly resourced in terms of skilled staff as well as sufficient funding to adequately involve both the public and community-based, representative stakeholders.

‘FOCUS ON THE FUTURE’

Chapter 9 – Additional, general comments on 'Focus on the Future'

The list of social and environmental stresses facing us is rather daunting – despite abundant information, human activities continue to drain rivers, reshape climate patterns, overpopulate the world, eliminate native forests, pollute the air, ground and seas. Many societies have seen social inequality and poverty rise in recent years.

In Western Australia, as well as contributing to global environmental problems such as global warming, we have our own symptoms of environmental decline. These include massive and increasing salinity in the wheatbelt, air and water pollution, biodiversity loss and contaminated land.

We have to change our ways. There is a required sense of urgency that is absent from 'Focus on the Future'.

In addition, 'Focus on the Future' fails to excite, or appeal to the wider community. It is reasonably accessible for people with an environmental background, but for others the feedback suggests that the content is not easy to grasp.

It seems that this confusion is not confined to the community – Government agencies are struggling to grasp the notion of sustainability. Without the support of key personnel in all agencies, it is clear that we will not be able to achieve significant progress with the sustainability agenda. There seems little or no emphasis in 'Focus on the Future' on the important cultural shifts that must take place within Government to support those desired outside of Government.

'Focus on the Future' recognises that the scale of actions taken to address environment and social problems has not matched the scale of the environmental and social issues we face. It is therefore imperative that the actions recommended in the Strategy are at a scale that truly address the issues.

We are concerned that the case studies being used to promote sustainability are generally small scale and limited in scope. They do not adequately demonstrate the scale and scope of change that is necessary to achieve sustainability in Western Australia.

The Draft Strategy should include some pilot studies at a scale more appropriate for implementation of sustainability. For example, we recommend that the North West Cape region and Ningaloo be used as a pilot for implementation.

The Alliance looks forward to these matters, and many of the recommendations in this paper, being adopted in the draft Sustainability Strategy.

Box 3 – Sustainability, governance and society – bullet point 1

How can governance and democracy be enhanced to achieve sustainability?

See chapters 4 and 8.

Box 3 – Sustainability, governance and society – bullet point 2

What institutions do we need to establish and change to help achieve sustainability?

See chapter 4.

Box 3 – Sustainability, governance and society – bullet point 3

In addition to the discussion in Chapter 6:

How can Government promote good corporate citizenship?

Sustainability challenges the way we work, live and recreate. It requires government, the private sector, the community and individuals to review current policies, production and consumption patterns, and lifestyles, to find pathways towards a sustainable future. One that is more rewarding to live whilst sustaining the ecological integrity and resource base of the planet we rely on. For those who accept sustainability as a guiding post, it will trigger tremendous innovation and creative thinking, and the ability to develop and prosper into the future.

Various private sector interests have identified the imperative for action and the economic opportunities that come with new more sustainable technologies and business practices. Many corporations such as LaFarge, BP, and Nike, to name a few, have already adopted internal Greenhouse targets and oil giants Shell and BP have recognised the opportunities of developing sustainable energy initiatives.

Speaking in Melbourne earlier this month, Greg Bourne, President of BP Asia Pacific, said:

> "In 1998 BP set its own target of reducing its greenhouse emissions by 10 percent from 1990 baseline levels by 2010. (BP's Group CEO, Lord) Browne's authority meant this had to be treated like a hard financial target, not a soft environmental one. A few weeks ago Lord Browne, speaking again at Stanford, announced that we'd achieved our corporate target eight years early. We've created value for our business while doing it, totalling about $US650 million at last count, while learning invaluable lessons for the coming carbon price shock. Among other things our internal carbon trading system has made us a world expert in this potentially massive market opportunity. Now we aim to hold our emissions flat up to 2012 while continuing to grow. We don't think that will be the end of action because the carbon shock is still to come – it is only the start."
>
> (*Changing course: A sustainable energy future for Australia*, Towards Opportunity and Prosperity Conference, Melbourne University April 4-5, 2002)

At a preparatory meeting for the World Summit for Sustainable Development again in Melbourne late last year Greg Bourne said that Australia must undertake a national project for sustainability and Governments must take a strategic role to facilitate opportunities for sustainability. He said we need a co-ordinated approach across government and between levels of government, national, state and local.

However, while business and the community are identifying opportunities for economic development the WA government has not responded to open up these opportunities. Many individual businesses have seen overseas successes in this area and identified the market winning potential of sustainability, but governments and peak industry bodies are often a long way behind some of their members. Analysis and research often focuses on the cost of more sustainable practice rather the on the benefits.

Government can promote and support good corporate citizenship through:

- the development of an economic Strategy for Sustainability;
- reform of legislation and regulation;
- provision of incentives and subsidies to appropriate businesses and industries; and
- Ministerial Roundtables for Sustainability convened by the Ministers for research to identify, publicise and support the economic opportunities and the job creation opportunities of sustainable industry.

However, we can look to industry itself to identify the support it needs. Below are some more extracts from the paper delivered by Greg Bourne for the energy industry:

> **"Engaging stakeholders**. We welcome the broadest possible participation in this vital national debate, including for example activist green groups and other non-government organisations. We ourselves are seeking to engage progressive players regardless of whether they come from politics, bureaucracy, business or the community. This needs to be a whole-of-economy and indeed a whole-of-society debate, not one confined to narrow and vested interests……
>
> **Improve the pricing of energy.** BP believes harnessing market forces by sending the right price signals, is the best way to ensure that cost, security and diversity of supply, and environmental and social equity concerns are addressed, efficiently and effectively. Experience shows however, that prices alone are not sufficient to efficiently and effectively deliver all energy policy objectives – measured regulation is also required.
>
> Fundamentally improving energy pricing means levelling the playing field across the energy sector by internalising the cost of carbon – to facilitate a shift to low-carbon growth. Several policy tools are available – the most common are indirect subsidies, a differentiated fuel excise regime, revenue neutral energy taxes, and cap and trade emissions trading systems……..
>
> BP also believes better use can and should be made of revenues generated by existing policy tools, such as fuel excise. Indirect subsidies and support programs can accelerate the shift to low-carbon growth – in renewable energy, and in other clean and efficient energy uses.
>
> **Energy efficiency.** BP knows from its own experience that significant cost savings are available through greater energy efficiency, and Australia is far from world's best practice in this arena. The UK's energy policy review is canvassing energy efficiency targets of 20 percent improvement by 2010 with another 20 percent by 2020. There are many voices in Australia calling for strong national targets here as well and BP is one of them. Better energy efficiency is the "low hanging fruit" of this whole challenge.
>
> **Renewable Energy.** We have to be more ambitious with renewable energy. Electricity accounts for 40 percent of Australia's greenhouse emissions. We need to speed the shift to renewables – wind, solar, tidal, mini hydro and sustainable biomass are key technologies – and we need more challenging mandated government targets to do it. Major green groups and the green power industry are advocating an additional 10 per cent of Australia's energy from

renewables by 2010, and the UK energy policy review has put forward a similar target. BP believes in setting challenging targets, and we could support this one.

Creative solutions. We face big challenges, but also have some big opportunities for win / win solutions. Precisely because energy is such a broad topic, the stage on which the debate plays out and on which the action unfolds has to be broad too. Solutions lie in better transport and land use planning, better public transport options, new technologies and knowledge-based industries, land and water restoration projects, regional development plans and many other areas. We should look everywhere, and not be afraid of change. For example, strong cooperation between oil companies and car manufacturers could produce big environmental gains, but it needs political leadership to make it happen.

A national stretch goal? To the extent that there has been an energy debate in Australia recently, much of it has focused on Kyoto and the perceived threats it poses to Australia's existing industrial base, especially around coal. But the post-carbon shock future that BP and many others envisage is full of business opportunities too. The Renewable Energy Action Agenda is aiming at a $4 billion industry by 2010. The Prime Minister's Science, Engineering and Innovation Council three years ago foresaw a global marketplace for environment industries, including clean and efficient energy solutions, worth $US500 billion a year. It suggested Australia pursue a five percent share of this. I have no doubts about it. Australia needs a bold target. Bold targets help you to shape a better future."

Key recommendations

See Chapter 6.

Box 3 – Sustainability, governance and society – bullet point 4

In addition to the discussion in Chapter 4:

What legal framework and law reform is required for sustainability?

Natural Resource Management legislative reform

There is an urgent need for a comprehensive overhaul and strengthening of Western Australian natural resource management legislation.

The current various pieces of natural resource management legislation not only fail to reflect accepted best practice principles for NRM, the legislative process has failed to keep pace with the advances in community implementation of natural resource management. NRM legislation needs to reflect principles such as sustainability and duty of care. NRM is now being delivered by community partnerships with government and industry at the regional level.

While there are a number of pieces of NRM related legislation currently being prepared the current process is ad hoc, with little thought to a holistic approach. It is crucial that reform takes place in an integrated and coordinated manner.

Current situation

Western Australia has a great deal of legislation dealing with environmental or natural resource management issues. Some of this legislation has been developed to respond to particular problems, while other legislation has been developed to deal with particular subject matter areas.

Western Australia's approach to environmental and natural resource management laws has largely been an ad hoc one, and while our natural resource management laws have been frequently amended, law reform has focussed on individual pieces of legislation rather than looking at the system as a whole.

This approach is continuing with the rewrite of agricultural legislation presently being undertaken. A number of pieces of agricultural legislation are being pulled together in one piece of legislation the Agriculture Management Bill. This process is focussing on agriculture and missing the opportunity to address broader natural resource management issues.

There continues to be concern about the management and administration of pastoral lands in Western Australia. Although the legislation was updated in 1997 it continues the ad hoc approach, puts responsibility for administration with yet another agency which is not even a natural resource management agency and supports an industry that is largely non-viable (see more specific recommendations on pastoral lands below).

As a result, our approach to NRM:

- does not promote the integrated management of our natural resources;
- contains multiple laws which can potentially apply to particular situations (e.g. Wildlife Conservation Act and Fish Resources Management Act with respect to recreational fishing);
- contains laws that are not used in practice because their penalties have not been updated, or because they have effectively been superseded by laws in other areas (e.g. Country Areas Water Supply By-Laws);
- contain variable standards for public participation in decision-making;
- set up a plethora of different bodies which deal with objections, appeals, review of decision-making,
- does not reflect accepted best practice principles such as duty of care, the principles of ecologically sustainable use and a regional approach to NRM;
- does not support the frameworks and partnerships currently being developed by community and government;
- has limited local government involvement; and
- does not adequately support community effort or capacity building.

Possible new approaches

The concept of Natural Resource Management legislation in Western Australia deserves close examination. And if it is to be considered seriously, an open public debate needs to be instigated as soon as possible.

A number of different models for natural resource management and environmental protection provide a basis for discussion, including:

1.1 Creating a single regime with comprehensive natural resources management functions (including environmental protection) and a hierarchy of national, State, regional and local agencies to perform those functions, each with its own planning procedures to guide the performance of those functions (as in New Zealand);[2]

1.2 Creating a unified regime for the management of land, water and biodiversity resources but maintain a separate environmental protection agency to act as an environmental advocate and a separate regime for land use planning and development control;[3]

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2 Gardner, A. (1999) Administrative Framework of Land and Water Management in Australia, *Environmental and Planning Law Journal*, 16(3), p216

3 ibid

1.3 Continuing with the current predominant system of multiple agencies with specialised functions for different aspects of natural resources management, each developing their own plans of management to guide the execution of their functions, but create an overlay of integrative procedures (for example, consultation, referral and recommendations for actions by other agencies) to ensure that each agency considers what other agencies are doing;[4] or

1.4 A hybrid approach where a compact ESD/NRM Act is developed that outlines the principles and requires Government Departments and Agencies and Ministers to act in accordance with those principles i.e. it would have to be binding on the Crown and have precedence over other State legislation. Existing sectoral pieces of legislation could continue to function and to be administered as at present, but subject to the new overarching Act, and they could be amended to bring them more into line with the guiding principles as time allowed.

The future

There is a need for a more coordinated approach to environment and natural resource management reform.

There is a need for a review of Western Australia's natural resource management processes to address the problems outlined in this paper and to establish a framework for future reform.

Pastoral lands

Regulation and management of WA's pastoral lands are particularly in need of reform. 2002 is a unique and statutory opportunity to achieve long-term environmental outcomes for WA's pastoral lands.

Amendments to the Land Administration Act 2000 require the Minister for Planning and Infrastructure to give notice to pastoral lessees by December 2002 of the Government's intention to exclude land from a lease when that lease is renewed in 2015.

This is an opportunity to acquire lands of high conservation value for the conservation estate and also to advance the concept of sustainable rangelands management.

A process must be established immediately (which includes public participation) to identify areas across the rangelands that have conservation value that should be excluded from leases when they are renewed in 2015. This is urgent as we only have until December this year to do this.

The Land Administration Act requires that land use on all pastoral lease holdings must be ecologically sustainable. Part 7 of the Land Administration Act makes this a mandatory outcome for management, and that responsibility lies with the Pastoral Lands Board as defined by s 95 (c) of the Act.

[4] **ibid**

Achievement of ecological sustainability compulsory under s 95 is not happening. What is absent is the mechanism for achieving the outcome from management goals and then a system for actually validating that this is so.

Legislative change to the Land Administration Act is required that will enable the Pastoral Lands Board to better ensure sustainable management of the rangelands.

The change required, is to legislate for the introduction of a set of broad principles and standards for ecological sustainability (derived largely from existing Commonwealth and State principles and standards) for arid zone natural resource management. To this end we have drafted a series of proposed amendments to the Land Administration Act (see attached).

Each lessee would then be required to develop plans and goals for ecological sustainable management of their lease, these plans and goals could be credited and audited against. The extension of pastoral leases in 2015 provides the Government with a prefect deadline for establishment of such plans. In other words leases that do not have accredited ecologically sustainable management plans would not be renewed.

Land Administration Act 1997
Suggested PART 7 AMENDMENT 2002

Section 95

In paragraph (c), after "…sustainable basis" add:

> "and make publicly available its broad standards and criteria for ecological sustainability on pastoral leasehold land as guidance for lessees."
>
> *[Enables the PLB to be proactive and consultative as the authority setting its own standards]*

Replace paragraph (d) with

> "facilitate the recovery of rangeland resources by promoting and enabling ecologically sustainable management and natural resources management planning, including strategic catchment and sub-catchment management and/or grazing systems, grazing controls, deferrals or stocking withdrawals, weed controls and rehabilitation treatments appropriate to the outcome of improvement in the condition of soil, vegetation and water resources throughout the rangelands."
>
> *[Links lease sustainability with NRM and ecosystem/regional concepts and processes; changes the emphasis from merely the prevention of more degradation to the recovery and improvement of all lands, especially the healthier and more responsive lands and condition states; clarifies the concept of range resources to include catchments and water]*

and insert before the current paragraph (k), which would then become (l):

> "maintain and make freely available a list of survey reports, maps and other key references on rangeland resources and their condition at State, regional and leasehold scales."
>
> *[Makes it incumbent on the Board to indicate to lessees and the marketplace that it already holds substantial and leasehold-specific baseline public information exists on rangeland resources]*

Section 105

In subsection (2), after "be renewed", insert:

> "subject to the requirements of section 108"
>
> *[Makes the granting of lease renewal in 2015 conditional on management for ecological sustainability]*

Add a subsection (4) in these terms:

> "Lessees who have not demonstrated ecologically sustainable management plans and are not in possession of ecological sustainability accreditation (ESA) approved by the Board under section 108 on 30 June 2015 will be offered a lease extension not exceeding 5 years in order to demonstrate either the attainment of ecologically sustainable management through ESA accreditation or otherwise notify their preferred options to surrender the lease, with regard to plans for de-stocking and other necessary arrangements and related applications (which may include adjustment supports)."
>
> *[Means existing expectations of lease renewals will be honoured subject to competently demonstrated commencement of management for ecological sustainability; gives new or non-performing lessees in 2015 a grace period to comply either through ESA or to take advantage of support provisions to surrender the lease back to the Crown; insures against the overuse exploitation of ending, short-term leases, or uncertainty]*

Add a subsection (5) in these terms:

> "A lessee who subsequently attains ecological sustainability accreditation (ESA) during the duration of a lease extension shall then be treated with regard to lease renewal as if he or she had satisfied the requirements of subsection (2)."
>
> *[Enables retrospective restoration of uniform entitlements to all lessees]*

Section 108

In subsection (1), replace everything after "Board" with:

> " manage the leased lands to achieve ecological sustainability.

[Replaces lots of well-meant but confusing words with the heart of the matter previously spelt out in section 95]

Replace subsection (2) with:

"The lessee must before 2015 develop and submit for the Board's consideration a copy of his or her current management plan for ecological sustainability for the whole lease and having adequate regard to all pastoral and related land use activities under the lease."

Replace subsection (3) with:

"The Board will maintain and make freely available the contact details of independent and suitably qualified ESA accrediting bodies approved by the Minister for each pastoral region."

[Gives the responsibility for approving accrediting bodies to the Minister and for communicating such approvals on the PLB; from 2002 there is potentially 13 years of development time for the PLB and its accreditation system and potentially up to another 5 years for lessees]

Key recommendations

See Chapter 4.

Box 3 – Sustainability, governance and society – bullet point 5

How should Government's purchasing power be used to promote sustainability and stimulate sustainable businesses?

The government cannot urge sustainability on the rest of the community without putting it's own house in order. Leadership must be provided in the first instance by the Premier, Geoff Gallop, and by the relevant Ministers in the departments and agencies under their control.

In its election policy, the Government said it would introduce annual environmental performance reporting requirements for all government agencies in areas such as energy consumption, waste disposal, vehicle fuel efficiency and recycling. All departments and agencies should immediately conduct an environmental audit of their resource consumption, waste disposal and technologies used. This would provide valuable insights for the departments and would act as baseline to measure improvement. The audits would have two key foci – the identification of wasteful practices and the environmental impact of the goods and services used, using a lifecycle analysis. Audits would cover types of consumable material used eg paper, amount of energy used, efficiency of equipment, potential for recycling, and disposal of waste.

As a result of the audit, changes in resources used and the amount of these used would be identified and should be implemented. This would include the achievement of mandated targets eg in reductions in energy, water and other resource use and the meeting of energy need from renewable energy. Changes may include retrofits of existing buildings to reduce energy and water consumption. It would also include the use of recycled goods and equipment eg re-built equipment.

In all instances, goods and services should be sourced from Western Australian sources, and if these are not available, research carried out and support provided to assist in the development of the production or supply of such goods and services. For example, much of the material recycled in WA is transported interstate, or overseas. Where possible the aim is for localised 'closed loop' processes. To ensure this takes place, Government purchasing policy should incorporate, as essential criteria, the level of environmental impact and whether goods and services are produced locally. All new buildings should take into account good environmental design principles to minimise energy and water consumption.

This leadership will be compounded, if the government regularly publishes an analysis of the costs and benefits of its shift to sustainability in its own operations, and promotes the ideas and technologies to the private sector.

As a large consumer, these actions would provide a boost to companies carrying out and implementing the audits, and providing the environmentally friendly goods and services. Additional measures such as regulation for required standards in buildings and office equipment, and advocacy to the Federal Government for tax incentives for environmentally products would also create local markets for local sustainable products and services. Research and development into local sustainability goods and services, along the lines outlined above, should also be encouraged with subsidies and other incentives and financial support.

Each agency and department will have a dedicated resource person with responsibility for the monitoring and facilitating implementation of sustainability. Savings through sustainability measures such as energy efficiency would remain with the department's operating budget and be used to offset the costs of the resource person and the implementation of capital and other improvements to ensure sustainability. As an added incentive a minor proportion of savings could be used to supplement the departmental budget.

Key recommendations

29. All Government agencies should be required to conduct and implement an environmental impact report and recommendations for improvement in areas such as energy consumption and consumption in general, waste disposal, vehicle fuel efficiency and recycling. The Premier's department should lead by example.

30. All Government agencies should be required to institute annual environmental performance reporting and mandated targets.

31. Agencies should be allowed to keep the financial savings from more sustainable practices and policies, with part of this hypothecated to investment in further improvement in environmental management.

32. Government should source local goods and services that will improve environmental performance and encourage research and development of local supply and manufacture of goods and services to promote sustainability.

33. The Strategy should compound the benefits for both the environment and the development of local sustainable business by promoting widely the demonstrated benefits.

Box 3 – Sustainability, natural resources management and biological diversity – bullet point 1

Can fisheries continue to provide economic opportunities within a framework for conservation? How do marine parks fit in with fishing? Can they help to make better economic and social outcomes? How can the coast be managed more sustainably?

- The Alliance supports the thrust of the "Policy for the implementation of Ecologically Sustainable Development for Fisheries & Aquaculture within Western Australia" (Department of Fisheries, in press) with one important reservation. This is the lack of a clear strategy to ensure the establishment of a decision support system for ecosystem-based rather than stock-based management.

- The achievement of ecosystem-based management is hampered by the absence of an overarching, bio-regional, marine planning system and the lack of integration between the implementation of the marine reserve system (by CALM Marine Conservation Branch), fisheries management and the Commonwealth's Oceans Policy.

- The economic wild fisheries of WA are probably fully exploited. Further increases in the value of production will have to be based on product development and marketing (value adding), sustainable aquaculture and fish habitat enhancement. There are marked conflicts between economic efficiency and social objectives in fisheries, as there are for most other areas of natural resource utilization.

Box 3 – Sustainability, natural resources management and biological diversity – bullet point 2

How can farmers and pastoralists adapt their management practices to conserve soil, save native vegetation, reduce chemical problems and create more diversity in production? What does the future hold for our agricultural landscapes?

To address the serious ecological and land degradation issues affecting WA it is essential that we develop new agricultural systems. The future agricultural landscape of WA will reflect a new way of doing agriculture based around deep-rooted perennials, preferably native species.

Western Australia's agricultural systems must also adapt to climate change. The recently released report 'Warnings from the Bush' by the Climate Action Network Australia outlines some of the expected impacts of climate change in WA. Climate change is expected to have a significant impact on agricultural systems and biodiversity in WA. It is essential that when planning for future agricultural management we address changed rainfall, frost and temperature patterns.

Elements of a future sustainable landscape:

- Landscape scale management;
- Highly biodiverse;
- Retention of remaining native vegetation, which is well managed and augmented by biodiversity plantings, connected by corridors;
- Healthy rivers and streams;
- High yielding high value crops grown to soil type;
- New deep rooted perennial crops; and
- Working within the constraints of the natural environment, not against it.

Mechanisms for driving new agriculture:

- Provision of incentives, such as rate relief, and stewardship payments. Support for revegetation and remnant vegetation protection;
- Implementation of recommendations from reports such as Native Vegetation Working Group to enable remnant vegetation protection and management, and revegetation;
- Establishment of an environmental levy;
- Development and implementation of sustainability strategies and NRM plans for each region of WA;

- Provision of expertise and facilitation to regional areas;
- Requirement for establishment and achievement of biodiversity and river health targets;
- Establishment and implementation of effective monitoring programs;
- Availability of locally relevant information ideally through personal contact on farm;
- Research and development for alternative deep rooted perennial native vegetation that is commercially viable;
- Developing farming systems based on deep rooted perennials;
- Better regulation – we need NRM legislation (see page 55);
- Requirement for pastoralists to produce and implement plans for ecologically sustainable management;
- Monitoring tools easily accessible to farmers and pastoralists – including requirement to monitor for biodiversity;
- Environmental Management Systems – properly accredited;
- Soil mapping;
- Farming to soil type;
- Alley farming;
- Regional vegetation management plans;
- Incentives to diversify into more sustainable land management; and
- Encouragement to ensure land management businesses are built on a diverse range of income streams, steering away from reliance on monocultures.

Key recommendations

34. The Strategy must facilitate the development of a new vision for the WA landscape that is highly biodiverse, based on landscape scale management and deep rooted perennials.

35. **Research and development is urgently required to develop commercially viable native perennial species**

36. **Farming communities must be supported through the process of change.**

Box 3 – Sustainability, natural resources management and biological diversity – bullet point 3

How can we better manage land? What is the role of technologies in areas such as satellite imagery, communications technology and data storage? How can the public gain better access to these new tools for land management?

Management needs to be at a landscape scale – to achieve this community groups need to develop and implement sustainability strategies, regional natural resource management plans, regional vegetation plans, water management plans, catchment management plans and farm plans. All these require access to information with which to adequately plan.

Community based decision making is essential. Community groups and farmers will implement these plans, so the community must develop them. To do this community groups and farmers need to be adequately resourced and have access to the latest research, data and technology.

Support for community access to technology:

- Recognition that technology is critical to improved land management;
- Satellite imagery is currently being used by NHT funded project Land Monitor to help map salinity and catchment planning. Funding for this project has almost run out, further funding is required;
- Encourage development of a diversity of satellite-based land management tools that are compatible with Land Monitor;
- Data acquisition and processing capacity at the local and regional scale is essential to enable community groups to make informed land management decisions;
- NRM resource centres are being developed in most regions; these need to be supported;
- Better cooperation between NRM agencies is needed to ensure resource efficiency and more integrated on-ground delivery of government services;
- Email and internet have significantly increased the community's ability to share information and communication with remote areas. Some regional areas still have limited access to the internet, this must be addressed;
- Technology must be regionally available;
- Public needs access to all data in an easily accessible form;
- Need to fund data acquisition;

Key recommendation

37. Government must support community access to the latest research, data and technology to enable improved land management.

Box 3 – Sustainability, natural resources management and biological diversity – bullet point 4

Up to one third of the Wheatbelt could be lost to salinity. Hundreds of rare and endangered plants and animals could be lost as well as destruction of small Wheatbelt towns already under depopulation pressure. Can we reverse this process and simultaneously create new economic opportunities and revived communities in the wheatbelt? Can regional towns be a focus for sustainable industries that help solve this problem?

New research is better defining the scale of the salinity. It appears inevitable that further areas will be lost to salinity as the cost of saving some areas at risk is beyond government and community resources. We therefore need a framework with which to make salinity investment decisions. Such a framework has recently been endorsed by Cabinet and is currently being ground-truthed in the Avon region and at a statewide scale.

Salinity investment must aim to protect high value public assets such as biodiversity, water resources, infrastructure and high value farmland.

Two million hectares have already been lost to salinity, and it is possible that up to four million hectares may eventually become saline. Loss of agricultural productive land at this scale is likely to increase pressure on many towns already struggling. Most recent responses to salinity have concentrated almost entirely on the economic and biophysical impacts of salinity. Creating a more sustainable land management system will be almost impossible without urgently addressing the social impacts of our failing agricultural system. The social fabric in many rural communities is stretched to breaking point by continuing loss of productivity, social isolation, decline in services, and poverty. Many land managers feel locked into current unsustainable practices, unable to change due to either lack of resources, expertise or confidence. Support and incentive must be provided to either change to more sustainable land management practices, or to withdraw from the industry with dignity.

We need to move away from notions that we can reverse the damage that has been done by simply throwing more resources at the symptoms of the problem without addressing the causes. This is not to say that in some areas the effects of salinity on agricultural production cannot be ameliorated through changed land use practices and smarter farming. However it is important for us to be very wary of 'quick fix' solutions that may provide some short term or localised relief from the effects of salinity at the expense of other parts of the community or wider environment.

However saline land does present environmental, social and economic opportunities. Some saline lands are highly biodiverse and should be protected for this biodiversity. Saline pastures can provide an alternative grazing system. Significant advances are being made in saline pasture production with several research projects currently being undertaken. New grazing production systems provide further economic opportunities for an alternative approach to traditional grazing management. There may also be potential in the use of saline water for farm-scale aquaculture.

To adequately address salinity and the other significant land degradation problems currently facing WA we need a new way of doing agriculture. We need a new

sustainable agriculture system based on deep rooted perennial vegetation – this can only happen if we have commercially viable varieties to plant, hence we need to research and develop not only new crops but new industries. This provides opportunities for regional areas, for example through renewable energy generation, speciality timber, wildflowers.

Further research and development is needed – this area has been neglected in the past.

Current research on salinity highlights the fact that this is a long term problem requiring landscape scale solutions that rely on a totally new way of doing agriculture, to reverse the trend in some catchments up to 70% of more of the catchment must be returned to deep rooted vegetation.

Key recommendations

38. Salinity investment must aim to protect high value public assets such as biodiversity, water resources, infrastructure and high value farmland. Our limited resources need to be carefully invested within an investment framework.

39. The social impacts of salinity need to be urgently addressed.

40. Research and development is required into commercially viable alternative crops.

Box 3 – Sustainability, natural resources management and biological diversity – bullet point 5

How can we protect our natural heritage and biodiversity while using our rich biological resources to develop new sustainable industries?

Western Australia is almost one third of Australia's land mass and encompasses a diversity of environments from tropical rainforest patches through desert grasslands to temperate / Mediterranean-climate forests and species-rich shrublands, as well as coasts and islands, estuaries and inland water bodies.

The biota is rich but incompletely documented. For example, Western Australia contains about 12,000 species of vascular plants (of which about 7,500 are described), which is nearly half of the estimated total for Australia and includes 45% of the nation's rare and threatened flora. The State has a more proportionally rich vertebrate fauna than most parts of Australia comprising over 2,700 species (including fish). The invertebrate fauna is thought to include tens of thousands of species, many of which are undescribed – for example, 50% of the scorpion species collected in the recent southern Carnarvon Basin were new to science.

Western Australia also contains 26 of the 80 Biogeographic Regions defined for Australia, some of those having the highest numbers of endangered and vulnerable species in Australia, and with high levels of extinctions recorded. For example, the survey of the southern Carnarvon Basin found that 48% of mammal species thought to have occurred originally in the region are now extinct.

In-situ conservation of this rich and varied biota poses a great challenge.

Preliminary assessments of the current conservation reserve system in Western Australia, conducted by the Department of Conservation and Land Management in collaboration with Environment Australia, have highlighted the existence of major gaps in the system. The study underpinning the development of the Interim Biogeographic Regionalisation for Australia (IBRA) found that only four of the 26 Bioregions could be described as adequately reserved.

A subsequent, more detailed study based on the vegetation types mapped by JS Beard found that, of the of the 769 Types originally identified, only 163 are adequately represented in the existing reserve system, 246 are poorly represented and 360 are not represented at all. Particularly high numbers of inadequately reserved vegetation types occur in the Avon Wheatbelt, Murchison, Carnarvon, Coolgardie, Pilbara, Mallee, Dampierland, Ord-Victoria Plains, Central Kimberley, Gascoyne, Yalgoo and Geraldton Sandplains Bioregions.

It is critical that the State move quickly to complete the establishment of the Comprehensive, Adequate and Representative protected areas system, to protect as much of the natural heritage and biodiversity values of the State for the use and enjoyment of present and future generations.

A basic tool for protecting the State's biodiversity and natural landscapes and seascapes is the establishment of a system of protected areas – national parks and nature reserves, conservation parks and a range of off-reserve conservation areas. Australia has adopted

as a national target the establishment of a Comprehensive, Adequate and Representative (CAR) reserve system. The Alliance fully supports this approach. However, it is recognised that there are biodiversity and other environmental values that may not be captured in a formal system of national parks and nature reserves.

It is crucial, therefore, that mechanisms are developed and supported in an on-going manner to promote conservation on the other lands. This is referred to as off-reserve conservation. In addition, it is recognised that it is essential to maintain some biodiversity values across the spaces between the parks and reserves, and the off-reserve conservation areas. These spaces, referred to as the matrix, provide the linkages for the mobile elements of the fauna.

Other studies of the State based on land-use, distribution of flora and / or fauna, geomorphic units and other environmental data have identified areas in need of conservation action, and regions in need of conservation action because of threats to the biota from pressures such as grazing and trampling, rising water tables and salinization. However, there is no single State-wide database which brings together nature conservation values, existing bioregional classifications, threats to those nature conservation values and land-use for the purposes of regional planning.

The establishment of such a database (possibly as a component of a whole-of-Government environmental database) should have priority as a fundamental tool for sustainability.

Extracts, chemicals and genetic elements from these plants, animals and micro-organisms are considered to hold tremendous promise for new medicines and agricultural products. It may be argued that the State has a global responsibility to enable benefits from these native plants and animals to be discovered and to be used for the benefit of people throughout the world. However, the Government also has a responsibility to ensure that the State benefits as much as possible from the use of its biological resources.

A suitable approach would be to develop a Bioprospecting Policy for the State that guides access to biological resources for bioprospecting purposes in such a way as to maximise benefits to the State including to Aboriginal communities where indigenous knowledge is utilized. In particular, benefits should include a fair share of any financial return gained by bioprospecting interests as a result of their access to the State's biological resources; building capacity for biotechnology in WA; and contributing to better knowledge of the State's biological resources. The policy should require a fair tendering process for access to the biological resources and that any harvesting is sustainable.

The natural environments of the State provide a high proportion of the resources that we rely on, including soils for farming, natural vegetation throughout pastoral regions, timber, fish and crustaceans, clean air and potable water, and a limited capacity to assimilate wastes, a large suite of unique and special native plants and animals, and the potential for future industries based on these species, aesthetic values, and options for spiritual renewal in natural environments.

Many of these environmental values have been severely degraded over the past 170 years since settlement; and some are at the point where they cannot be compromised

further if we are to achieve sustainability. In other words, our efforts to build economic wealth and to maintain social capital should not be at the expense of our natural capital.

Two clear directions for the use and management of the State's natural environments flow from the understandings outlined here. Firstly, we must protect what remains from further degradation and from threatening processes. The proposals for establishing a CAR protected areas system and for complementary off-reserve conservation measures are one component of this. In addition, we must ensure that all future natural resource decisions and management takes place within a strong and clear sustainability framework that halts the deterioration, and begins the restoration processes.

Secondly, we should incorporate in all future natural resource decisions and management a learning process, so that we can progressively fill our knowledge gaps and, at the same time, improve our ability to manage the environment. Such a process is referred to in scientific circles as adaptive management; the concept is very similar to the social sciences concept of action research.

It is possible, therefore, that we can establish a wide range of industries based on the State's biodiversity. There are significant opportunities to develop and expand tourism and ecotourism activities throughout the State. In carrying out these activities, we should make sure that we contribute to the further development of our knowledge base. In other words, all activities throughout the State that rely on the natural resources should be putting something lasting back into the system. The most long-lasting contribution that can be made is in the form of knowledge and understanding. What follows from that is that if there is a learning cycle in place, there is a far greater chance that the resources will be cared for.

A key objective in conserving the biota and the natural landscape values throughout the State is to maintain options for future generations. These biological values may well provide the biological material for new industries and new pharmaceutical products into the future.

Box 3 – Sustainability, natural resources management and biological diversity – bullet point 6

The South West of Western Australia is one of the world's 25 'hot spots' for biodiversity. Increasing global attention is being directed to our attempts to save forests, create habitat for rare and endangered species, manage feral animals and weeds. Can this become a new economic opportunity for the State? How can this help communities in rural areas?

The identification of the South West of Western Australia as one of only 25 global biodiversity hotspots is welcome recognition amongst the international scientific community of the extraordinary biological values of this region. This is the only part of Australia that has received this kind of recognition. However, the recognition also addresses threats: there is a high level of concern amongst members of the international scientific community that the extraordinary biological values are under threat.

It should be noted, though, that some of the biodiversity values of the South West extend to North West Cape, and so any Government response to the Myers *et al.* (2000) recognition should take this into account.

Two challenges for Western Australians arise as a consequence of the recognition of the (extended) South West Region as a global biodiversity hotspot. The first challenge is to ensure that the special values that gave rise to the recognition in the first instance are not eroded. This means that natural resource (including biodiversity) planning and management must improve very substantially to avert the identified threats, and any potential threats. Threatening processes at work in the Region include land clearing, rises in water tables (reflecting the level of overclearing) and salinisation, overgrazing of remaining natural vegetation by livestock including goats, overharvesting of wood products and overexploitation of ground and surface water resources, inappropriate fire management, *Phytophthora* species and other plant diseases and foxes and feral cats. All these threatening processes must be managed better. And impacts of the threatening process to date should be ameliorated through processes such as revegetation by local native plant species.

Programs and techniques for improved planning and management of the biodiversity values and threatening processes could be applied elsewhere in Western Australia and globally, and become incorporated in Australia's overseas aid programs in other global biodiversity hotspots such as Polynesia / Micronesia (which includes the Pacific Islands), Sundaland and Wallacea (which incorporates the Malay Peninsula), the islands of Indonesia and the Phillipines (including Brunei and Timor).

The second challenge is to properly celebrate and enjoy the biodiversity values that gave rise to recognition of the global biodiversity hotspot status in the first place. This will necessarily include developing a better understanding of all those values, and making this information readily available to all Western Australians. A dynamic South West Biodiversity Hotspot website that provides access to the available information, and is regularly up-dated as new information becomes available, is one possible mechanism. Such a web site could well be incorporated into the teaching and learning activities from primary level through to tertiary level. And the dynamic component could allow data and information collected and collated by members of the community to be incorporated, as happens in some Frogwatch and Waterwatch programs.

The South West Biodiversity Hotspot could become a major tourism and eco-tourism destination if promoted adequately, and with appropriate diverse facilities to provide for the range of tourists who might come to visit.

Box 3 – Economic strategies for sustainability – bullet point 1

The world is committing to greenhouse targets. How can we assist in this global challenge? What is the long-term future and what are the best transition strategies to achieve sustainable energy systems? Can we participate in the new economic opportunities emerging from renewable energy, energy efficiency, waste management, carbon storage and planning to reduce impacts? What social benefits can be found from this process?

Western Australia, already one of the highest per capita greenhouse polluters, will increase its greenhouse gas emissions by at least 17.42 million tonnes a year, if the industries proposed for the State go ahead. This will be an increase of around 30% on emissions in WA. When climate scientists are saying that we must reduce our greenhouse gas emissions by 60-90% to stabilise climate change, WA can no longer encourage, support or accept energy intensive industries as a major component of the WA economy.

Australia is committed to meeting a greenhouse gas target level of not more than 8% above our 1990 level and we are already 17% above 1990 levels. As a wealthy country we should be investing in sustainable industries and / or industries that use little energy. We cannot continue to argue that WA is special case or that allowing the establishment of these industries here will somehow lead to a global decrease in emissions, when there are alternatives available and it will mean not meeting our international commitments. Australia is already an international pariah due to its stance on climate change. Our reputation will only get worse, and we will be responsible for adverse environmental impact on a global scale, if we allow energy intensive, greenhouse polluting industries to be established in WA when other countries are more mindful of emission levels.

CSIRO and other reports show WA to be hard hit by climate change, eg a potential increase in summer temperatures of almost 7° C in the north-west by 2070, and up to 60% decrease in winter rainfall in the south-west and severe impacts on agriculture and biodiversity[5]. Not doing our bit will only rebound on WA's environment, population and economy.

Transition to a new economic base

A rapid transition to a carbon light economic base is essential if we are to reduce our greenhouse gas emissions by the recommended 60-90%. To do this, we need to identify the economic opportunities and the job creation opportunities, of reducing greenhouse gas emissions. We need to look to the specific comparative advantages WA enjoys and what we need to do to capitalise on these.

The economic opportunities of reducing greenhouse gas emissions have already been identified and demonstrated in other parts of Australia and internationally[6]. The most

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[5] **CSIRO op cit**

[6] **See for instance, The Australia Institute 'Why Cutting Greenhouse gases will be good for regional jobs' November 2001 www.tai.org.au/ (under Background Papers)**

often quoted example is the Denmark wind industry. In 1990 the Danish Government identified the need and opportunities and supported the development of wind energy in Denmark. It now is the country's fourth biggest export earner and directly employs 24,000 people in Denmark and internationally. In WA these kinds of economic opportunities need to be identified, put into the Western Australian context, the impediments to taking advantage of such opportunities recognised and mechanisms put in place to overcome these impediments.

A carbon light economic base could include:

- a focus on reuse, resource recovery and recycling with the extraction industry, for instance, making the shift to recovering and reprocessing resources from discarded products and old landfill sites;

- re-manufacturing and restoration of existing goods;

- knowledge-based services such as the provision of environmental and sustainability services; and

- the provision of environmental and sustainability technologies and services such as renewable energy systems, sustainable land and marine management systems, and zero emission public transportation systems. These could be major exports for the State.

CO2 reduction at source – not via sinks

The focus of greenhouse action must be on the dramatic and rapid reduction in greenhouse gas emissions at source. The use of sinks to reduce the amount of greenhouse gases in the atmosphere can be considered only as a transition strategy. Sequestering carbon should be seen as a way of taking immediate action to reduce greenhouse gases in the atmosphere while other strategies are developed and implemented to reduce greenhouse gases emissions at source. There should be a direct ratio between the amount of greenhouse gas emissions sequestered and the amount of reductions of greenhouse gas emissions at source with the objective being for the amount of emissions reduced at source to far outweigh those sequestered.

Sequestering carbon in vegetation will result in an initial increase in carbon taken out of the atmosphere, but this scale of increase cannot be sustained, particularly if the vegetation is harvested. There is only 18 million hectares of arable land available in the south-west agricultural region and not all of this will be planted for carbon sequestration.

A strategy for reducing Greenhouse emissions

The Government is in the process of developing a greenhouse strategy for WA. This process, and the material produced to date has so far failed to seriously and comprehensively address the key issues needed for WA to effectively reduce it greenhouse emissions.

WA must immediately develop and implement a strategy to reduce greenhouse gas emissions in WA and Australia by 70% by 2050, including setting targets for government

and industry sectors, instituting necessary legislation, standards and regulations and putting in place appropriate planning and infrastructure. The four key foci of the strategy would be:

- energy conservation;
- a shift in our economic base from industry that is hot, heavy and wet, to cool, light and dry;
- the production of energy from renewable sources; and
- the immediate cessation of broad scale land clearing.

The government should show leadership by reducing its own greenhouse gas emissions. All government departments and agencies should be required to prepare Greenhouse Action Plans with mandatory emission reduction targets, including mandatory targets in energy conservation and efficiency, sourcing of energy needs from renewable sources, lessening waste, reducing car use and switching vehicle fleets to cleaner fuels.

The Strategy would focus on the urgent introduction of incentives and mechanisms to encourage energy efficiency and conservation in at all levels of production and consumption in industry, commercial and community sectors. It would also identify and promote regulations, standards and legislation to facilitate and support the development of sustainable industries, to remove the subsidies in the form or reduced energy prices to heavy greenhouse polluting industries.

To identify heavy users, the potential for reductions in energy use, and to get a realistic picture of future demand, the Government should:

- undertake a strategic study of the main base-load and peak demands for electricity. Such a study would need to identify which electricity uses in industry, commerce and households are the main sources of base-load and peak demand;
- undertake an economic analysis of the options for reducing demand in priority areas. For example, better insulation of homes can reduce demand for air conditioning. This could prove to be more cost effective than supplying electricity at peak times; and
- analyse all demand and supply options from a greenhouse gas emissions perspective.

See Bullet point 6 in this section for recommendations about promoting the share of renewable energy.

WA should also strongly advocate for the Australian government to ratify Kyoto Protocol, to take action beyond Kyoto to reduce Greenhouse gas emissions, to support the policy of contraction and convergence, and support people and countries affected by climate change.

The strategy would also include fostering education, information and training about climate change and sustainable energy and transport in schools, universities, vocational education and training institutes, and the community at large.

Key recommendations

41. Government must develop and implement a strategy to reduce greenhouse gas emissions in WA and Australia by 70% by 2050, including setting targets for government and industry sectors; introducing the necessary legislation, standards and regulations; and putting in place appropriate planning and infrastructure.

42. The Government must reduce its own greenhouse gas emissions by requiring all government departments and agencies to prepare Greenhouse Action Plans with mandatory emission reduction targets, including mandatory targets for energy conservation and efficiency, sourcing of energy needs from renewable sources, lessening waste, reducing car use and switching vehicle fleets to cleaner fuels.

43. Government should urgently introduce incentives and mechanisms to encourage energy efficiency and conservation in at all levels of production and consumption in industry, commercial and community sectors.

44. Government should conduct research to identify, demonstrate and support the economic and job creation opportunities of reducing greenhouse gas emissions.

45. Government should identify and promote regulations, standards and legislation to facilitate and support the development of sustainable industries, and remove the subsidies in the form of reduced energy prices to heavy greenhouse polluting industries.

46. Government should ensure carbon sequestration is used only as a transition strategy while other strategies to reduce greenhouse gases emissions at source are being developed and implemented.

Box 3 – Economic strategies for sustainability – bullet point 2

How can industry become more eco-efficient, adopting cleaner production techniques, creating opportunities for industrial ecology where wastes are seen as resources? What are the key export opportunities in eco-technologies? How can a more sustainable industry improve local communities?

The State Government should seek to improve market framework conditions to enable the market to drive businesses to environmental and sustainability best practice, and beyond. Market framework conditions are best served with smart environmental policy tools such as performance targets, negotiated agreements, public private ventures, consumer incentives and environment taxes.

Simply restricting economic development will not lead to sustainability. What is needed is a redefinition of economic progress. Any industrial system must stay within the capacity of its surrounding natural ecosystem. Our existing economy is divided into three phases – first, the production of materials (extraction, separation or refining and physical and chemical preparation to produce finished materials). Secondly, the manufacture of products and thirdly, the customer product cycle of involvement.

There are substantial barriers to the linkages needed to close the loops within and between all three areas. In particular, companies are required to produce more in order to prosper. New rules for, and attitudes to product and resource stewardship, are needed – on the part of industry, Government and the consumer.

The role of Government:

- track materials and energy flows, creating a database – to measure progress and inform business and the community;
- promote activities that conserve materials;
- introduce a levy on waste to landfill that represents the true costs (environmental, social and economic) of landfill;
- legislate for extended producer responsibility for particular types of waste, thus creating price signals to drive materials conservation;
- move to eliminate subsidies and preferences for extractive industries, virgin materials and waste disposal, and replace them with taxes on resource use and waste production;
- work to address the many other barriers to increased materials efficiency by filling information gaps, closing produce and materials loops by ensuring the producers remain responsible for their products from cradle to grave; and
- integrate materials efficiency with other important agendas such as energy policy, sustainable urban development and full employment.

The role of industry:

- manufacturers should be aware of the environmental profile of the goods they are incorporating into their products;

- designers should examine the life cycle impacts of their choices and have access to existing life cycle data to do so;

- producers should pass on information to consumers and buyers in an easily accessible form;

- industry groups should be asked to assist their members to develop and implement sustainability strategies;

- products should be designed to reduce waste and to incorporate alternative materials;

- product life cycles should be extended;

- information on the life cycle impacts of products should be generated, collated and provided to the public, to assist with choices; and

- examples of cleaner production, eco-efficiency and sustainability should be showcased.

The role of the community:

- a sustained shift in the market to sustainable manufacturing needs a community with the information on the life cycle impacts of the products about which they are deciding;

- information should be easy to access, understandable, relevant and credible. It should be available through labelling on the produce or from another readily available source such as website;

- an information programme must be an integral part of school and public education on sustainability and waste minimisation in the home, workplace and in public;

- labels for all products and packaging should include the amount of recycled content and any reuse and recycling instructions;

- community waste audits should be undertaken to provide the community with data and analysis reporting on how they are progressing; and

- public recognition should be given to achievers and innovators.

Extended Producer Responsibility

Around the world progressive governments are moving down the path of Extended Producer Responsibility (EPR). This increases the responsibility on producers for

managing the impact on the environment to the end of the products lifespan. Operational in 18 OECD countries, EPR closes the loop between the production of a product and its associated waste, (increasingly this includes emissions of various types) and those with the greatest potential to minimise the impact - the producers and manufacturers.

An example is the Eco-Cycle Law passed in Germany in 1996, which gave EPR to companies which develop manufacture, process or market products. Similar systems operate in France, Austria, Belgium, Sweden and some US states covering products such as electrical goods, packaging, cars, paints and batteries.

EU governments are now using EPR principles to guide manufacturers towards cleaner production and energy usage. The NSW Government has recently completed a review of EPR.

New eco-technologies

Technologies of the past are still undermining our natural resources - clean air, fresh water and fertile soil. However, there are new and emerging technologies that have the potential to contribute to a new type of economic growth – one less dependent on natural capital. These technologies – especially in the area of renewable energy and transport technologies – have the capacity to substantially reduce the use of energy and contribute to dematerialisation. They can increase technological innovation and investment, generating growth and employment.

Yet, there are significant barriers to overcome before these technologies make significant progress. Their adoption depends on relative future price relations between different sources of energy, the need to get prices right, government policies to set standards for eco efficiency and voluntary commitments by industry. Consumer preference for eco efficient products should also be considered.

Conclusions

Innovation must be promoted and rewarded – to encourage the development of new technologies that use fewer natural resources, reduce pollution or risks to health and safety.

When carrying out the comprehensive review to incorporate sustainability principles into all legislation, the Government should ensure that legislation does not hamper innovation or erect non market barriers to the dissemination of new technologies. Public funding to support technological changes for sustainability should be provided. Benchmarking and demonstration projects need to be established to stimulate the faster uptake of new technologies. Public procurement policies should be used to accelerate the spread of new technologies. Clear and reliable information must be provided on new technologies to give consumers, producers and investors a better understanding of the long term profitability of investment and planning for sustainability.

Key recommendations

47. Government should improve market framework conditions by using smart environment policy tools such as performance targets, negotiated agreements, consumer incentives and environment taxes.

48. Government should foster new approaches to product and resource stewardship. Legislation should be introduced for extended producer responsibility.

49. Barriers to the adoption of new eco-technologies and eco-efficiencies need to be identified and addressed by Government.

Box 3 – Economic strategies for sustainability – bullet point 3

What is necessary for each region of Western Australia to make the transition to sustainability?

One of the great challenges for the transition to sustainability in the regions is the lack of resources at a regional level that are specifically targeted to assist in regional sustainability planning, implementation and to monitor and ensure compliance with policies designed to achieve that aim. It is pointless, for example, to put in place best practice sustainability policies and plans if there are no resources for implementation or there is no way to monitor progress (eg, by ensuring that on the ground development guidelines are complied with by developers).

Another challenge is the widely held misunderstanding that regional WA is homogeneous. A regional specific approach is needed for each region in WA.

It will also be important to change the culture of the Regional Development Commissions and local government, which tend to stress economic development at the expense of broader environmental and social goals. Regional Development Commissions should have sustainability at the heart of their operations and their mission statements need to be revised to include sustainability objectives.

In order to achieve a proper transition to sustainability and permit strategic planning in that regard, it will be important to have a clear understanding of the state of the environment in each region. Existing data and information should be collated and analysed and funding obtained to fill the gaps.

The above information will be enhanced by doing an 'inventory' of environmental, cultural, social and economic values in each region of WA. Such an inventory should be regularly reviewed, with changes to the prevailing attitudes in a particular region factored into future decisions affecting that region.

The Regional Development Commissions should appoint Sustainability Officers to provide strategic advice on the transition to sustainability. It will also be important to put in place regionally appropriate sustainability or community indicators, which can be used by the Commissions to report on progress.

Local governments should be funded to enable the appointment of Sustainability Officers to work proactively with communities, developers and other drivers of economic activity so as to ensure that sustainability principles are incorporated into development applications before they are submitted. The Officers should also provide training for Shire CEOs and town planners.

Regionally based officers should be appointed to work with regional NRM groups such as the South Coast Regional Initiative Planning Team (SCRIPT) to ensure that both State and Local Government planning and development policies, conditions and guidelines are complied with and enforced. This cross-government approach would be both an efficient use of resources and promote better cooperation and coordination between the State and Local Government.

Government needs to ensure greater integration and cooperation between its agencies at a regional level to minimise duplication in the delivery of services to regional areas. At present there is often a 'silo mentality' in Government agencies that militates against a key feature of sustainability – integration. Better integration could see smaller regional and remote centres (which are increasingly suffering from withdrawal of services and population decline) benefit from the establishment of multi-agency resource centres that share costs and facilities.

The new sustainability agenda should be built on some of the excellent work already achieved by local governments through the Local Agenda 21 process. It has taken local authorities some time to warm to LA21 – let's not have them groaning at what they may see as more policy imposition!

Regional sustainability should also be fostered through more adequate resourcing of local and regional community groups. Community groups, already struggling through volunteer burnout and increased demands on community time, will shoulder much of the burden of change required to achieve sustainability on the ground.

Extensive and comprehensive regionally appropriate community consultation and communication is essential to facilitate the transition to sustainability at a regional level. This will require the development a communication strategy that addresses regional needs and resources to implement the strategy.

The Government should also consider establishing a 'Centre for Excellence in Renewable Energy' (or similar title) in the Kimberley, the home of so many potential sources of renewable energy. It is suggested that this is established in Derby as a job-creating alternative to the current Derby tidal proposal, which we do not support in view of its significant negative environmental impacts.

Key recommendations

50. Government must provide adequate resources for regional implementation of the sustainability agenda.

51. Resources must include funding for officers for each region to assist with implementation of sustainability.

52. The Strategy should include regionally appropriate community consultation processes.

53. The Strategy should include a communications strategy that also addresses the needs of regional communities.

54. Regional Development Commissions must be required to make sustainability a key objective.

Box 3 – Economic strategies for sustainability – bullet point 4

What role can Government and industry play in making houses more sustainable in urban, rural and remote communities?

Water and Energy Efficiency and Demand Management

Role of Government

The Government through a number of government agencies should play an important part in a water and energy efficiency campaign for the building industry. Firstly, through encouraging the relevant industry associations to work cooperatively with each other and the government on such a campaign. Secondly, the government could play a role in providing technical information, professional training and promotional material for such a campaign. Thirdly the government should provide a regulatory framework to stimulate the water and energy efficiency campaigns and measures.

The recommendations of this following section rely heavily on the policy recommendations of Diesendorf (2000) that related to energy and transport policy. Many of the ideas presented for energy conservation can and should be applied to the water conservation also. We set out below what the Federal, State and Local Governments can do.

Federal Government Measures

Cooperate with the Federal Government to: "Implement national mandatory energy & greenhouse labelling and national mandatory minimum energy & greenhouse performance standards for a wide range of appliances and equipment, including all new motor vehicles. Make standards increasingly stringent every 5 years, publishing schedules for improvement 3-5 years ahead, so that businesses can plan, and with requirements based on 'best practice', not just removal of the worst products from the marketplace" (Diesendorf, 2000).

Cooperate with the Federal Government to implement national mandatory water efficiency labelling and national mandatory minimum water efficiency standards for a wide range of water using appliances including clothes and dish washing machines, toilets, shower heads and garden reticulation systems. Make standards increasingly stringent every 5 years, publishing schedules for improvement 3-5 years ahead, so that businesses can plan, and with requirements based on 'best practice', not just removal of the worst products from the marketplace.

Cooperate with the Federal Government to: "Continue to develop national model codes for buildings, and make codes for energy efficiency increasingly stringent every 5 years, publishing schedules for improvement 5 years ahead (for implementation of codes, see State and Local Governments)" (Diesendorf, 2000).

Similarly, to cooperate with the Federal Government to develop a national model codes for building water efficiency, and make codes for water efficiency increasingly stringent every 5 years, publishing schedules for improvement 5 years ahead.

State Government Measures

"Remove incentives for selling excessive electricity from electricity retailers in all States. NSW has taken the first step by having a revenue cap, which encourages energy retailers to become energy service companies. The goal should be reduction of energy bills, by encouraging the efficient use of electricity, not reduction of the cost per unit of electricity purchased" (Diesendorf, 2000).

Remove any incentives water service providers such as the Water Corporation have for selling excessive water to customers. Review the regulatory and revenue framework, so the goals of the service providers are aligned with goals of increasing water efficiency, and minimising per capita water consumption.

"Mandate energy ratings for all homes and require that these ratings be published in all advertisements for the sale and rental of the homes, as is already done in the A.C.T." (Diesendorf, 2000).

Mandate water rating for all homes and require that these be published in all advertisements for the sale and rental of homes.

"Based on national model codes developed by the Commonwealth, legislate for mandatory energy performance standards for all homes, with new and renovated homes to meet standards forthwith and existing homes to achieve specified standards increasing in 5-year steps. Since NatHERS (National Home Energy Rating Scheme) is only concerned with the building envelope, it would be preferable to develop a more comprehensive indicator of factors influenced during construction, such as cooking fuel, hot water system efficiency and fuel, installed lighting density, provision of solar clothes drying facilities (clothesline), etc. SEDA's energy smart homes point score system is a step towards such an indicator" (Diesendorf, 2000).

Based on national model codes developed by the Commonwealth, legislate for mandatory water efficiency performance standards for all homes, with new and renovated homes to meet standards forthwith and existing homes to achieve specified standards increasing in 5-year steps.

"Mandate that electric hot water services in mainland Australia be sold packaged with a lifetime Green Power purchasing requirement. The purchase package would have to include the installation of a meter in cases where it is not already connected" (Diesendorf, 2000).

"Remove all cross-subsidies for electricity and fuel prices in rural areas and replace them by location allowances… (These could still be funded by a levy on the price of electricity in urban areas.) This would free up funds for private investment by people living in rural areas into energy efficiency, solar hot water, and small-scale solar and wind power" (Diesendorf, 2000).

Local Government Measures

The role of Local Government could be substantial, since it is responsible for approving building plans, subdivision designs, including local stormwater management schemes.

"Implement energy ratings and energy efficiency standards for all new and renovated buildings, and eventually all buildings, as mandated by the States" (Diesendorf, 2000).

Implement water ratings and water efficiency standards for all new and renovated buildings, and eventually all buildings, as mandated by the State.

"Require a solar or natural gas hot water system to be installed in every proposal for a new or substantially renovated residential building, as currently required by Leichhardt Council in Sydney "(Diesendorf, 2000).

Role of Industry

Design of new homes and renovations and retro-fitting of existing homes to improve water and energy efficiency should be given a high priority in the building and real estate sectors. Such considerations are not given much if any weighting currently in the building and real estate industry, and this needs to change. There is a great deal these industries could be doing to show leadership in moving towards sustainability. New homes should be designed with water and energy efficiency as prime considerations and objectives. All building designs should be assessed for their energy and water efficiency before they are finalised. This should include the establishment of energy and water efficiency rating schemes for houses. Such assessments should also apply to subdivision design.

The building and real estate industry clearly have a fundamental role to play in achieving such outcomes. The industry associations such as the Urban Development Institute Australia, Housing Institute Australia, Master Builders Association, Australian Property Institute, and the Real Estate Institute of WA, and the national Real Estate Franchisors Association would all need to play a role. They could initiate an education campaign within their associations and the broader industry sectors, that among other things would: highlight the importance of water and energy efficiency for the State and the community as a whole; identify existing costs of relative inefficiencies, including environmental 'externalities' of inefficiencies; identify the specific benefits of increasing water and energy efficiency; arrange for seminars and promotional material to support the campaign; arrange for relevant professional qualification training and courses to incorporate relevant technical information. This could complement the recommendations mentioned below

The benefits of increasing water and energy efficiency could be evaluated using Ecological Footprint analysis, or Life Cycle Assessment. Life-cycle assessment analyses the total environmental impact of a good or service, including all phases of production, use and disposal. In addition, an estimate of total energy and water consumption, for an average family with average patterns of consumption, and the costs of these for a fixed intermediate term, say 10 years would be a useful calculation. This type of analysis could allow homeowners and prospective buyers to compare the impacts and costs of various properties over a 10-year period, and the savings to be found from implementing water and energy efficiency measures.

For businesses, incorporating water and energy efficiency measures does not currently appear to be a high corporate priority. It would be possible for the early adopters to promote their properties with an environmental efficiency label, which could give them a marketing edge. In time, the ongoing saving from efficiency measures may be taken

up by the public as significant factors to consider when buying, especially, if energy and water costs increase in the future (a high probability).

Industry could develop energy and water efficiency programs to households, such programs could include auditing houses for energy and water efficiency, providing advice on how to improve these, and the sale and installation of energy efficient products including compact fluorescent lighting, insulation, solar hot-water systems, water efficient shower heads.

Key recommendations

55. Government should review the regulatory and revenue frameworks so the goals of water and energy service providers are aligned with the goals of increasing water and energy efficiency and minimising per capita consumption.

56. Government should mandate energy and water ratings for all homes.

57. Local Government should implement water ratings and water efficiency standards for all new and renovated buildings as mandated by the State Government.

58. Industry should be demonstrating leadership in moving towards sustainability, e.g. through new home design and an education campaign within their association and the broader industry sector.

References

Diesendorf, M (2000), *Key Greenhouse Response Strategy in Energy and Transport for Australia: A Discussion Paper*, Institute for Sustainable Futures, University of Technology, Sydney.

Box 3 – Economic strategies for sustainability – bullet point 5

The world's conventional oil production is peaking as consumption outstrips discoveries by 9 to 1. The remaining oil is predominantly in the Middle East and is subject to political uncertainty. Can Western Australia's gas reserves be part of the world's solution to this economic and resource problem? Can we become a model for the use of gas as a transition fuel? How does this lead us to a hydrogen economy? Do we adapt our cities and towns as we make them less oil dependent and can this be better for communities?

Peaking oil production poses a significant challenge as it is a key energy source, especially for transport and agriculture. Despite statements from many commentators including the International Energy Agency that we face a peak in the next ten to twenty years there has been no comprehensive policy response by government, at the national or state level. Rather than await energy shocks as economically available reserves decline and costs increase (and supply becomes less stable) we should start the transition now to more energy efficient, less carbon intensive transport and production systems. A state transport energy policy should be a priority.

Western Australia has significant gas reserves that can play an important role in fuelling transport, though gas will be a transition fuel rather than a long-term energy source. The low prices of petrol, the cost of vehicle conversions and dedicated gas vehicles and the limited refuelling infrastructure (outside the metropolitan area) pose barriers to greater use of gas as a transport fuel, but government leadership and investment can help overcome these – for example shifting to gas for a significant share of the government vehicle fleet, subsidies for gas infrastructure in country areas.

Alternative fuels including liquid fuels from biomass and hydrogen fuel cells need greater attention. The costs and benefits of different alternatives should be assessed on a lifecycle basis, and this should inform government policy. Liquid fuels from biomass may offer new opportunities for agricultural areas, however the energy costs of producing them may not make them viable. A review by Giampietro et al in 1997 concluded "large-scale biofuel production is not an alternative to the current use of oil and is not even an advisable option to cover a significant fraction of it." Advances in technology might improve prospects but it is more likely that we will have to reduce energy demands significantly, and doing so offers environmental and social benefits through reduced carbon emissions, reduced travel demand and localisation of production and activity.

There is much that can be done to reduce oil dependence of our settlements by managing travel demand, improving more energy efficient travel options and better managing land use. Limiting Perth's urban sprawl to promote a more compact urban form is important, coupled with increased density and mixing of land use at appropriate locations is important. Investment in public transport infrastructure and services and better provision for cycling and walking, with supportive urban design and retrofitting the existing built environment, is critical too. Initiatives such as TravelSmart individualised marketing has achieved sustained reductions in car use, but does not have secure funding; it should be better funded and its coverage extended in concert with system improvements in deficient areas, for example outer suburbs. More detailed recommendations are provided by Diesendorf 2000, Newman and Kenworthy 1999, Newman et al 1990, amongst others.

Key recommendations

59. The development of a state transport policy must be a priority in order to make the transition to a more energy efficient, less carbon-intensive transport and production system.

60. The costs and benefits of the various alternative fuels should be assessed on a lifecycle basis and incorporated in government energy and transport policy.

61. Government must adopt a strategy to reduce our oil dependence, addressing issues such as travel demand, energy efficient travel options and better managing land use.

References

Curtis, C, (1998), *Integrated Land Use and Transport Planning Policies,* WA Planning Commission, Perth.

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Box 3 – Economic strategies for sustainability – bullet point 6

Western Australia has vast renewable energy sources. What needs to happen to develop a world leading renewable energy sector in this State?

With energy generation and use being the major contributors to greenhouse gas emissions, and WA's high per capita energy related emissions, it is imperative we promote a culture of energy conservation and that we have a rapid increase in energy efficiency in supply and use as well as in the proportion of electricity generated from renewable sources (for information on consumption patterns, see the Australian Bureau of Statistics *Energy and Greenhouse Gas Emissions Accounts, Australia, 1992-93 to 1997-98*, Cat. No. 4604.0 May 2001).

Tools necessary to achieve these changes include pricing, direct funding, tax changes, regulation, institutional change, planning, demand management, new technologies, education and the provision of information. These need to be delivered as a whole package rather than implementing some components in isolation because they reinforce one another and will deliver a greater benefit than merely the sum of the component parts.

International experience has shown that renewable energy is a growth industry in terms of jobs and exports. Work by The Australia Institute shows that jobs in renewable energy are regional jobs, and have the potential to provide a much needed revival in rural areas (see attached paper 'Why Cutting Greenhouse gases will be good for regional jobs' November 2001). Putting the focus on promotion and facilitation of sustainable energy can help to achieve other core government goals.

Overarching principles essential to developing a world leading energy sector in WA include:

- Putting in place structures, institutions and relationships that will significantly reduce the amount of energy to be generated from fossil fuels. This includes efficiency in generation; co-generation, encouraging embedded power generation and therefore minimising the need for transmission and distribution over long distances; and placing a heavy emphasis on efficiency and conservation by end users. One such mechanism would be to require that greenhouse gas emissions from the construction and operation of power plants be a deciding factor in all power procurement processes.

- Recognising that market processes alone are not sufficient to ensure environmental and social outcomes. To ensure that social and environmental objectives are achieved, WA needs a strong, independent energy regulatory authority, a clear licensing regime for electricity retailing and distribution activities to protect consumer interests, a charter of good practice and an energy ombudsman.

- Leadership by example by the State Government to both show the way forward and to demonstrate the benefits of improved efficiencies and conservation and of meeting energy needs from renewable sources of energy. Mandated targets, with reporting requirements, should be set for all Government departments and agencies.

Specific steps required are:

- Sustainability issues must be considered in pricing policies. The external costs of power generation and use should be taken into consideration by retailers and especially for regional areas. Coal-fired power stations must be phased out as soon as possible because of their greenhouse and air quality implications and no new coal-fired plant should be built. The establishment of a regulator's office with the power to regulate prices may be one way of achieving this. It could also provide accreditation and monitoring of green power schemes such as Natural Power.

- The disaggregation of Western Power currently being considered by the Electricity Reform Task Force should ensure that the access to the electricity grid be improved for new sources of energy such as renewables and cogeneration as well as leading to greater efficiency in the system. Western Power should be disaggregated vertically into three separate businesses comprising generation, transmission and distribution, and retail activities. Transmission and distribution should remain in Government hands (and be independent of Western Power) and generation opened up to competition to permit independent generators to enter the market. Once successfully completed electricity retailing should be opened up to private firms with mechanisms in place to protect consumers. In the meantime a public sector agency (not Western Power) should manage retailing. This should ensure that we do not repeat the unfortunate errors of others who have reformed their electricity market only to encounter greater problems than existed before. The disaggregation of Western Power in a stepwise manner should give priority to permitting private power generators to enter the market.

- In the light of the problems of dominance of a small market by a major player, Western Power should be both horizontally as well as vertically disaggregated to allow the development of renewable energy particularly in regional areas. As well as stifling independent power producers in direct competition with them, Western Power appears to be building renewable capacity (the Albany wind farm) at costs considerably higher than comparable capacity in the private sector. This has the potential for reducing public, institutional and potential customers' support for renewable energy.

- A revenue cap should be instituted for energy retailers (as is done in NSW) to avoid the potential push to increase energy generation and consumption for financial success, and shift the focus of energy retailers to the provision of energy services to all consumers rather than the provision of energy.

- The concept of 'negawatts' should be built into any future power procurement processes. The installation of technologies that will reduce energy use should be a required component of future power procurement tenders. This is often a far cheaper option than installing expensive new plant.

- The assessment of future power needs must be analysed by an entity independent of power producers. This entity would be required to assess, and make recommendations in regard to improved efficiencies in supply and use,

and energy conservation. The current Office of Energy is too closely aligned with Western Power and needs to be given more independence to provide unbiased advice to Government on future energy options.

- To encourage the growth of State based renewable sources of energy, we should be setting a State target for provision of energy from renewable sources that is on top of the Federal target and can be met only from State sources. This could be developed as part of the State's greenhouse strategy.

- In addition, targets should be set within these renewable energy targets for meeting energy needs from particular renewable sources, with contracts being awarded to the most cost efficient on a competitive tender basis. This will foster competition within renewable sources rather than between sources, that could result in the over development of energy sources such as biomass, that are currently cheaper. This kind of competitive tender process was at the heart of the UK's Non-Fossil Fuels Obligation (NFFO) and was a significant factor in rapidly reducing the price of renewable energy.

- The State Government should be looking to meet all their energy needs through renewable energy sources. This would show good leadership and provide the guaranteed long-term contracts renewable energy producers need. They could make a start on this immediately by directing State Government agencies to use Natural Power, or by calling for tenders to meet power needs from natural sources. The recent Water Corp call for Registration of Interest provides an ideal opportunity for one of the State's largest users of energy to show leadership in this area and provide a long-term customer base for renewable energy. However the ROI do not actively encourage the provision of renewable energy to meets its electricity needs. In addition, it would be very short sighted for Water Corp to continue to meet the large part of its energy needs from fossil fuel. It would be one of the State's biggest single contributors to greenhouse gas emissions at the same time as it is struggling to deal with the huge impact of reduced rainfall - a situation that will only continue to get worse as climate change continues.

- Renewable energy is often localised, small scale and variable. Provision must be made for renewable energy to be 'topped-up' for customers who want to take renewable energy. The option of bilateral contracts should also have the scope of being able to ensure diversity and reliability of supply through mandatory or voluntary 'pool' arrangements.

- Renewables should be the first option for remote, off grid areas. 'Islands' of a wide mix of renewable sources of energy could be developed to meet off grid power needs using such sources as wind farms, solar, sustainable biomass and small scale tidal turbine projects based on ocean currents. This would ensure a reliable, clean and sustainable source of power for communities at the extremities of the grid and those that are off grid, and gives these customers the choice of renewable energy. An 'island' approach avoids the need for costly high voltage transmission lines that have adverse environmental impacts in their siting, construction and use. Back-up could be provided by gas or diesel, depending on size.

- Active campaigns to encourage energy use should no longer be allowed by Western Power or by other energy generators. For example, Western Power's current campaign for reverse cycle refrigerated air-conditioning. There is an irony in Western Power on one hand supporting localised programmes such as Albany Greenhouse Allies, which has been remarkably effective in reducing energy use by small businesses in the Great Southern, but on the other hand mass marketing energy consumption through reverse cycle refrigerated air-conditioning across the State.

- State Government departments and agencies also have the opportunity to reduce energy costs, and offset loss of Western Power revenue, by again showing leadership and making investments in efficiencies, and investing the resultant savings in further efficiencies. This has already been effective in the case of DOLA and the Police Department with the payback time for initial investments by the latter being in the order of eight months.

- All subsidies from electricity and fuel prices in rural areas should be replaced with transparent remote-area location allowances. To free up funds for private investment by people living in rural areas into energy efficiency, solar hot water, and small-scale solar and wind power.

- Subsidies, in the form of reduced energy prices, must be removed from large, inefficient industries. This would remove revenue loss and possible cross-subsidisation by other users. These are often hard to uncover, and are usually hidden behind commercial confidentiality clauses. An example is the 2 cents per kWh paid by the then biggest single user of electricity, Simcoa's silicon smelter (formerly Barrack Silicon), when other industrial customers were paying 11.5c / kWh and residential customers around 12.05c / kWh (Hilda Turnbull MLA, South West Times 23.11.89).

Key recommendations

62. Sustainability issues must be considered in pricing policies. The external costs of power generation and use should be taken into consideration by retailers, especially for regional areas.

63. Government should build in the concept of 'negawatts' into any future power procurement processes. The installation of technologies that will reduce energy use should be a required component of future power procurement tenders.

64. Government must stop active campaigns to encourage energy use by Western Power or by other energy

generators and develop a comprehensive public education campaign involving advice, displays and information about energy efficiency and renewable energy.

65. Government should set State targets for the amount of WA's energy to be generated from renewable sources within Western Australia such as wind, solar, biomass, tidal (but not tidal dams) and geothermal sources. There should also be targets within each renewable source to foster competition within, rather than between, renewable sources.

66. Government should foster small-scale embedded energy generation to minimise the high losses in transmission and distribution and the adverse environmental impacts of siting and construction of high voltage transmission lines.

Box 3 – Economic strategies for sustainability – bullet point 7

What is the future for mining and resource industries in an eco-efficient and dematerialising global economy? What are the opportunities for resource recovery technologies and how can mining and resource industries contribute to sustainability?

These questions assume particular importance in Western Australia, which has a high level of economic reliance on the mining and export of minerals and natural gas. Global trends that may impact on this reliance include:

- A lasting decline in world oil production that will probably place an increased emphasis on the value of natural gas and its by-products.
- An increasingly strict carbon pollution regime that will punish greenhouse-intensive economies and industries through a variety of economic and political mechanisms (eg Kyoto, WTO, World Court).
- A potential fall in the price of iron ore through greater use of recycling and substitution by carbon-fibre and other technologies.
- A potential fall in the price of gold as it has little intrinsic value.
- A reduction in domestic use of coal as renewable energy technologies displaces coal-fired electricity generation.
- Reduced opportunities for bulk exports as nations pursue sustainability strategies of greater self-reliance and reduced material throughput.
- Increasing transport costs impacting on the economic wisdom of bulk commodity exports.
- Domestic political opposition to greenhouse intensive, polluting heavy industry and unsustainable mining practices.
- International economic instability leading to volatile commodity prices or the collapse of one or more export markets.

Acknowledging unsustainability

It is a simple enough matter to conclude that the mining and fossil fuel industries are inherently unsustainable, since they rely on the extraction of finite quantities of materials from the earth. The industries in question have worked hard to establish sustainability credentials in Australia, this can't change the fact that for any given mineral province or well field, a finite amount of recoverable resource exists which, once exhausted, will not be replenished on timescales meaningful to human society.

It is an important first step for governments and companies alike to acknowledge this fact, so that sustainability does not become another euphemism for 'business as usual.' It is an uncomfortable possibility that in a truly sustainable world, remaining a highly

centralised, energy-intensive, bulk exporter of low value goods may simply not be possible.

Alternatives for industry

The mining and resource industries nonetheless have a crucial role to play along the road to sustainability, as our present economy is dominated by them.

It is important to acknowledge the progress made, particularly in the mining industry, to reduce local impacts of pollution on surrounding communities and the strides made in rehabilitation techniques. In some instances these industries have invested substantial resources in biodiversity surveys, ground and surface-water modelling and other studies that have added considerably to an understanding of the ecosystems in which their operations are based. Rehabilitation techniques developed for the mining industry have made real strides in understanding how plant and animal communities can re-establish in degraded areas.

Nonetheless, it is still often the case that mining companies find themselves at odds with the communities in which they operate. It is impossible to mine an area without massive disturbance of the surface and subsurface environment, and most mining operations create mine voids and very large quantities of tailings that permanently alter the surrounding environment. Options for industry include progressive back filling of pits, decreased use of open-cut mining, smaller scale operations, and a recognition that some areas are too important for any form of mining.

Attempts by the industry to introduce 'multiple land use' criteria as a means of mining within the conservation estate should be seen as a direct attack on all four of the 'sustainability principles' outlined in the discussion paper.

The progress of corporate globalisation (and industrial capitalism in general) tends to favour large, centralised operations over smaller, lower impact forms of mining. It can be argued that smaller scale prospecting for higher value minerals represents a more sustainable form of industry and can potentially employ many more people, but the basic constraints of a finite resource still place limits on the actual sustainability of any form of mining.

Fossil Fuels

The fossil fuel industries present us with a compelling set of arguments for unsustainability.

While the fast dwindling supplies of cheap oil and approximate limits to the amounts of natural gas are matters of public record, it remains a fact that there is enough readily available coal in the world to change the climate beyond all recognition. Western Australia faces this dilemma acutely, with an entire community of the South-West based on coal mining. The coal industry lobby has recently launched a campaign pointing out that carbon emissions from coal are gradually falling as technology improves, and highlighting that gas drilling operations on the north-west shelf are venting vast quantities of waste CO_2 into the atmosphere as a normal part of operations.

The State Government has made the point a number of times in the discussion paper and in the launch of the sustainability strategy that ramping up exports of natural gas can help reduce global greenhouse emissions. No quantitative argument has been presented for this position, which we suspect has more to do with economic imperatives than environmental ones. In the absence of a global system for accurately crediting carbon emissions and displaced emissions (which it is believed the Kyoto process would go some way to providing), it is dangerous in the extreme for the Government to be promoting the increased use of gas as a means of addressing climate change.

We suggest that the future of the State's fossil fuel reserves may provide the key test of the government's commitment to sustainability. Unless we are willing to consider sequential development, carbon re-injection and capture, or simply leaving the resource in the ground, it will be a demonstration that we remain addicted to hydrocarbons and bereft of innovation.

A future for industry

We believe that with a world-class education system and a talented, motivated pool of professionals, Western Australian industry has an enormous amount to offer the world. A home-grown industry in renewable energy technology could be just around the corner. We urgently need industry based on cradle-to-grave design that incorporates life cycle evaluations of embodied energy and produces no waste products, other than those that can be used by other industries. We need industries based on recovering useful materials from the mountains of scrap left over from the 20th Century, and we need industry that provides meaningful employment and quality of life, not just a 'standard of living.'

The challenge is not one of technology; rather, it is one of imagination.

Key recommendations

67. The Strategy should include strategies to move Western Australia away from an economy based on being an energy-intensive, bulk exporter of low value goods.

68. The Strategy should not include the concept that increasing natural gas exports is the answer to sustainability for WA.

69. The Strategy must address moving from fossil fuel dependence to a renewable energy future.

Box 3 – Economic strategies for sustainability – bullet point 8

How can Perth and regional towns become more sustainable? Can we use urban design, public transport, travel demand management, waste and water management more effectively to reduce our ecological footprint? How can we manage urban development so bushland can be conserved?

Available information shows that our settlements are where most resources are consumed and waste produced, and quality of life in them is threatened by environmental, social or economic changes. Making Perth and regional towns more sustainable is key to achieving a more sustainable future across the state.

Some strategies we could use to do this include:

- urban growth management including urban growth boundaries to define spatial limits to urban areas, planning controls and development incentives to direct development to where it is needed, local area development strategies to localise regional planning goals and greenbelt protection measures to keep rural land uses intact;

- integration of transport and land use through accessibility guidelines to inform development location decisions, transport impact assessment requirements for major urban developments, effective policies and government investment in transit oriented development, long term planning and reservation of land for public transport routes and interchanges and freight terminals and including transport considerations in all government land use decisions;

- enhancing the Liveable Neighbourhoods community design code and making it the statutory standard, not an optional guideline, to achieve denser, better integrated urban communities; and

- supporting and extending the TravelSmart individualised marketing program to encourage use of travel alternatives.

More detailed suggestions are provided by Curtis 2000, Curtis 1998, Newman and Kenworthy 1999.

With regards to managing urban development to conserve bushland, limiting the urban footprint, giving conservation greater priority in strategic planning and statutory planning decisions, and allocating adequate resources for land acquisition are important.

Key recommendations

70. Urban and regional development should always be planned around sustainability-related considerations, such as access to public transport and maintenance of greenbelts.

71. Government should support and extend the TravelSmart program.

72. The conservation of urban bushland should have greater priority in planning decisions.

References

Curtis, C, (1998), *Integrated Land Use and Transport Planning Policies*, WA Planning Commission, Perth.

Curtis, C, (2000), *Transport: Future Perth working paper*, WA Planning Commission, Perth.

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Box 3 – Social strategies for sustainability – bullet point 1

What strategies can we adopt to build social cohesion while addressing key economic and environmental issues?

Firstly it must be acknowledged that social issues need to be addressed and are as important as economic and environmental issues if we are to move to a sustainable future. Resources must be committed to addressing social issues; all too often these issues are fleetingly acknowledged and then ignored when making funding decisions.

The sustainability agenda must address social and community issues such as social inequity, injustice, community services and infrastructure, quality of life, individual and community well-being and community stability.

What we are trying to achieve

- More equitable and fairer society/community
- Communities empowered to develop and take own actions
- Improved sense of community
- Community needs are met
- Community recognising need for change
- Community accepting of change
- Community initiating change
- Community involvement in decision making
- Management of change

Research requirements

- Identification and understanding of social issues involved
- Understanding the causes of community decline
- Develop principles of equity and transparency
- Recognition and understanding by all sectors of the extent of change that is needed
- Recognition and understanding of the impact on communities of the change required.

Action

- Make information available and locally relevant

- Develop and implement a comprehensive capacity building program
- Process to involve community in decision making
- Commitment of resources
- Develop with community participation Social indicators of progress
- Provision of advisory services, locally developed and delivered
- Provision of local facilitators to assist communities to explore options and become involved
- Development and implementation of an incentives program
- Support in dispute resolution
- Support group processes
- Initiate policy options for restructuring assistance where change is necessary
- Encourage and engage business and industry groups to have a role in building partnerships to initiate and maintain change
- Provision of funding assistance to enable involvement of non-government organisations
- Facilitation of partnerships between community, NGOs sectors, business and government.
- Build capacity of government and non-government to better manage and deal with the issues
- Establish Social Assessment Authority and assessment process
- Integration of decision making scales
- A comprehensive community engagement process must be established including a communications strategy.
- See page 101 for further comment.

Key recommendations

73. Social issues must be given equal consideration with economic and environment issues when developing the Strategy.

74. Government must make a significant investment of resources to address social issues in the sustainability process.

75. A communications strategy is required as part of the Sustainability Strategy.

76. The Strategy should include the establishment of focus groups to identify and scope community issues that need to be addressed.

Box 3 – Social strategies for sustainability – bullet point 2

In addition to the discussion in Chapter 6:

How can we achieve jobs growth while protecting the environment and improving society?

Experience overseas has shown that jobs growth does occur when implementing a sustainability agenda (see Chapter 6). Potential initiatives include:

- providing symbolic political leadership;
- removing perverse subsidies to 'old economy' industries;
- developing a Cabinet submission system that produces triple bottom line assessments of project/policy/legislative proposals;
- promoting WA as the best place in the world to produce organic agricultural products;
- as NZ has done, developing ventures with international agricultural companies wanting a place to grow organic produce;
- providing stewardship payments to farmers and pastoralists in recognition of their important role in land stewardship. This would help supplement farm income.
- acknowledging that jobs are not only produced with mega-projects;
- refusing to publicly finance any more fossil-fuel fired power plants;
- renegotiating the 'take or pay' gas purchase contracts;
- establishing a Sustainability Commission backed by legislation that takes advice from EPA and a new Social Assessment Agency, and undertakes integrated project assessments;
- establishing a Government-backed green jobs investment bank, that jointly finances green innovation with international investment banks such as Triodos;
- introducing environmental taxes; and
- introducing an environmental levy.

Key recommendations

77. Government should work with stakeholders including Unions WA, industry and community groups to identify 'green job' opportunities.

78. Government should provide incentives to facilitate the development of green jobs.

Box 3 – Social strategies for sustainability – bullet point 3

What strategies can we adopt to reduce the impact of our consumer lifestyles and improve our quality of life?

Quality of life does not come from object ownership and is not increased through excessive consumption.

Unfortunately, modern marketing techniques are so powerful that we are often left feeling like there is a connection between consumption and happiness.

> "*If I could just afford the right car or buy the fashionable clothes, or consume the right soft drink … then I'd be as happy as the model in the poster."*

Consumption doesn't lead to happiness and as a direct result of our consumer-oriented lifestyle, many of us are left feeling disenchanted, dissatisfied and exhausted from chasing what doesn't really exist.

Quality of life and genuine fulfillment comes from enriching experiences, positive relationships, fulfilling challenging work and the opportunity to contribute to our community.

To reduce the impact of our consumer lifestyles and improve our quality of life, we need to shift our emphasis from consumption to experience in all facets of life.

The more we actually *participate* in life instead of observing and consuming, the greater our quality of life.

What we should be doing:

1. Support and encourage free community based festivals, performances and family events by:

    - ♦ providing funding;
    - ♦ making public space available at no charge;
    - ♦ providing promotional support and signage opportunities; and / or
    - ♦ providing information and support to organizers.

2. Encourage non-consumption based fundraising initiatives and produce an "Ideas Kit" for organisations looking for help, i.e. instead of selling badges / red noses etc encourage creative consumption free experiential methods such as sponsored walks, casual dress days, head shaving, talent quests etc.

3. Encourage experience based recreation, eco-tourism and service-based businesses by:

   - ♦ providing funding for research and development of new ideas;
   - ♦ recognising and rewarding initiative;
   - ♦ prioritising experience-based tourism for help and funding from government funded support bodies such as the Perth Convention Bureau, WA Tourism Commission, Small Business Development Organisation;
   - ♦ providing free training and support to service-based business through SBDC, BEC network etc; and / or
   - ♦ developing tertiary courses which focus on experience-based tourism and managing and marketing service-based businesses.

4. Encourage participation in sport and physical activity through prioritising project funding, providing outstanding facilities and raising the profile of appropriate role models.

5. Encourage participation in the arts and cultural activities through prioritising project funding, providing outstanding facilities and raising the profile of appropriate role models.

6. Recognising and celebrating volunteers and elevating the profile and status of voluntary work by:

   - ♦ accrediting skills and experience developed through volunteering and awarding employer-relevant accreditation certificates;
   - ♦ educate employers, and other selection panels on the value of voluntary experience;
   - ♦ broaden the application of Recognition of Prior Learning systems;
   - ♦ incorporating a required course-related field placement in all tertiary courses with an emphasis on placements which benefit the community in addition to providing experience;
   - ♦ facilitating links and networking between volunteer projects and schools, seniors groups and other community groups; and / or
   - ♦ raising the profile of appropriate role models.

7. Planning public infrastructure, city design and all new building to improve quality of life and reduce the impact of consumption by:

   - ♦ encouraging local shopping options rather than regional shopping centers;

- designing creative, diverse playgrounds and recreational areas;
- use harmonious landscaping;
- prioritise family friendly, disability friendly, environment friendly development;
- plan cities around smaller neighbourhood centres of activity;
- plan streets for people not cars by prioritising pedestrian friendly streets, footpaths, bike paths and public transport. Include quality seating and other footpath facilities. Don't forget banners, sculptures and road murals; and / or
- prioritise public art, public open space and community facilities. Think beautiful and if in doubt leave things natural.

8. Specifically promote and market the value of experience above consumption by:
   - positive marketing campaigns which highlight the value of experience in a rewarding life;
   - developing television and radio documentaries and lifestyle programmes which review and promote new and exciting experiential possibilities ("Have you tried abseiling yet?); and / or
   - raising the profile of appropriate role models / positive initiatives.
9. Encourage and fund projects which develop a sense of community ownership, responsibility and participation e.g.:
   - community gardens;
   - community building projects;
   - public meetings and meaningful consultation processes;
   - encouraging community-based ownership and management of facilities, especially in lower socio-economic areas;
   - Streets Alive, Neighborhood Watch and Safety House schemes;
   - community managed "Neighbourhood Houses"; and / or
   - provide funding, training and support for mentoring programmes and organized, community-based support networks such as parent-to-parent mentoring, carer networks, community based counseling, voluntary literacy (and other) tutoring schemes, neighbourhood based coaching and skill sharing.

10. Encourage sharing rather than excessive individual ownership by:

    - ♦ funding libraries, including toy libraries;
    - ♦ developing, funding and managing community equipment and appliance pools (one lawn-mower per street is plenty);
    - ♦ building "Intentional Communities" in all areas as a positive sharing-oriented, cost effective housing alternative;
    - ♦ support and encourage "Swapmeets", tax compliant barter systems, Skill Share and similar initiatives;
    - ♦ develop a low-cost neighbourhood car-share scheme; and
    - ♦ prioritise support for shared transport including public transport and car-pooling with special traffic lanes, parking spaces etc.

11. Ban or significantly limit the amount of commercial advertising permitted or visible from major public areas, especially natural areas, heritage buildings, places of cultural significance and areas designed primarily for children.

12. Set up a public event fund that provides money and other support only to public events that do NOT have consumption-motivated sponsorship.

13. Maintain and support Healthway sponsorship of Arts and Sporting events with a health-based rather than consumption-based message. Develop similar health promotion funding bodes to support other areas of community life which currently rely on consumption-based sponsorship. Prioritise events that encourage community participation, especially for young people.

Key recommendations

79. Government should support, encourage and fund free, community-based, non-consumption activities such as festivals, performances, family events, sport, cultural activities, recreation and eco-tourism.

80. Planning of public infrastructure, city design and all new buildings should aim to improve quality of life and reduce the impact of consumption.

81. The Strategy should specifically promote and market the value of experience above consumption.

82. The Strategy should encourage and fund projects that develop a sense of community ownership, responsibility, sharing and participation.

83. Government should ban or significantly limit the amount of commercial advertising permitted or visible from major public areas, especially natural areas, heritage buildings, places of cultural significance and areas designed primarily for children.