

Leadership in Environmental Sustainability: Towards a More Integrated Approach to Natural Resource Management in Victoria

Brian Coffey and Andrew Major

*Department of Sustainability and Environment
240 Victoria Parade
East Melbourne, VIC 3002*

Disclaimer

The views expressed in this paper are those of the authors and should not be regarded as presenting the views of the Department of Sustainability and Environment or the Government of Victoria.

ABSTRACT

The importance of environmental sustainability is increasingly being recognised by governments around the world, as well as in Australia. There is also a growing recognition of the complexity of environmental issues and acceptance of the value of more integrated and systemic approaches to address them. Evidence of progress with the development of more integrated approaches, is however, is less clear cut. Using recent experience in Victoria as a case study, this paper discusses how a more integrated approach to natural resource management can be progressed across an organisation.

INTRODUCTION

Victoria has many environmental or ‘natural’ assets, covering land, water, biodiversity (both plants and animals), and air. Important values associated with these assets include:

- Intrinsic value (biodiversity);
- Ecosystem services they provide (clean air, water);
- Amenity and recreational benefits they provide;
- Opportunity to use them to provide economic and social goods; and,
- Maintenance of inter-generational equity (see chapter 2 of Eckersley 1992 for a detailed discussion of different motivations for environmental concern).



Maintaining, and where possible enhancing these assets will undoubtedly contribute to Victoria's long term environmental sustainability. However, some available evidence suggests that in many cases these assets and the values we associated with them are subject to serious threat. For example, the assessment provided in the Victorian Catchment Management Council's (VCMC) report "*The Health of Our Catchments—A Victorian Report Card*" which provides an authoritative and comprehensive assessment of efforts to date (2002).

Loss of Native Vegetation Cover—It is estimated that 70 per cent of Victoria's native vegetation has been cleared since European settlement, and that this clearing has impacted in particular upon vegetation types (Ecological Vegetation Classes) in the more fertile and / or accessible landscapes that are suited to pastoral, agricultural or urban land use (VCMC 2002, p28). Logging of native forests has also been undertaken at unsustainable levels, as is recognised in "*Our Forests Our Future*" (Government of Victoria 2002).

Importantly, land clearing not only reduces biodiversity (including habitat for animals) it is also a major driver for other natural resource management issues, such as soil erosion, rising water tables and dryland salinity.

Dryland Salinity—Currently, 670,000 hectares is predicted to be at risk from shallow saline water tables. A worst case scenario is that within 50 years the area at risk of severe salinity could be over 3 million ha (National Land and Water Resources Audit 2001, pp22-23). Under this scenario between 8 and 18% of Victoria's agricultural land is predicted to fall into the high salinity risk category, with a further 47% at moderate-risk. High risk areas are concentrated in the Goulburn-Broken, North Central, Glenelg-Hopkins, and Corangamite regions. While this worst case scenario may not occur, the clear message is that even 'less severe' scenarios will have major impacts.

Agricultural losses of \$27 million pa from dryland salinity are estimated to increase to between \$77 and \$166 million per annum. Estimates of damage to infrastructure in non-metropolitan Victoria are estimated to be around \$12 million per year (eg damage to roads, building foundations etc) (National Land and Water Resources Audit 2001 p26).

Research also indicates that many best farm management practices are inadequate to address the problem of groundwater recharge and rising watertables. Further despite tree planting efforts (excluding plantations) over the past 10 years which have resulted in about 86,000 hectares of land being revegetated, continuing our rate of tree planting will only revegetate 2.5% of private land by 2050, which will not be sufficient to address future salinity threats (VCMC 2002, p98).

Soil Acidification—Approximately 3 million hectares of land (23% of state's agricultural land) is losing productivity due to soil acidification, and current practices are accelerating the rate of acidification. The area affected is expected to double within the next 50 years (to 6 million hectares) despite the application of lime treatments. More than half of the affected land is in north east Victoria, and it is anticipated that future impacts will rival that of salinity. By 2050 agricultural losses in excess of \$1.2 billion are estimated. There are also concerns about offsite and potentially irreversible impacts (VCMC 2002, p66).

Waterway Condition—It is also estimated that 34 per cent of major rivers and stream in Victoria are in poor or very poor conditions (Victorian Catchment Management Council 2002, p34).

However, the above examples are not the only environmental threats facing Victoria, as the following selection of agreed catchment condition indicators from the VCMC Report show.

Table 1. The Condition and Trend of Selected Environment and Natural Resource Indicators for Victoria

Indicator	Statewide Assessment of Condition and trend
Conservation of native vegetation types at the state and bioregional level	Poor and negative
Conservation status of species at the state and bioregional level	Poor and negative
Index of stream condition	Moderate
Environmental flows	Unknown
Estuary condition	Unknown
Urban water consumption	Unknown
Groundwater allocation and use	Good and stable
Compliance with bulk water entitlements	Unknown
Dryland salinity	Poor and negative
Soil acidification	Moderate and negative
Soil structure decline	Poor and unknown
Greenhouse gas emissions	Negative

Source: VCMC 2002 The Health of Our Catchments: A Victorian Report Card.

Importantly, the nature and magnitude of different threats varies, as does the spatial expression of these issues across Victoria, and across land tenure (ie threats originating from private land may be expressed on public land, and vice versa). In addition, some areas will be subject to multiple threats, leading to stressed landscapes (Morgan 2001).

Economic and demographic change—In addition to environmental challenges, the negative consequences of economic and demographic change also need to be considered.

Long term trends are for declining terms of trade for farmers with farm profitability being highly variable, both within and across industries. Estimates indicate that:

- Northern Irrigation Area is responsible for 30% of States Gross Value of Agricultural Production.

- Areas of central Victoria, the Mallee and western Wimmera made an annual loss for the five years up to 1996-1997.
- Estimates that 50% of the economically smallest farms could disappear with minimal impact upon Victoria's net production (VCMC 2002, p102).

Social and demographic change is also occurring:

- Ageing populations and changing nature of work (mechanisation);
- Shrinking populations in some areas, growing populations in others, and;
- Changing profiles of landholders in different areas (rural residential, corporate farms, part time farming units) (VCMC 2002, p102).

Important inter-relationships between environmental health, economic prosperity, and social wellbeing also occur. For example, there is potential for some areas of the State to be economically marginal, in social decline, and with significant environmental problems. Further, if climate changes impact scenarios are considered, the need for coherent integrated policy responses is even more apparent.

The above discussion of particular threats gives an indication of the environment and natural resource management challenges facing Victoria. So if these are some of the major threats and associated issues, how well can Victorians be considered to be responding? The VCMC's overall assessment is insightful as the following extracts demonstrate:

"Are we making a difference?—the simple answer is yes, but not enough!"

"Our natural resources are under pressure and, in many cases, will not be passed on to the next generation in good condition ... under current resourcing and management paradigms our efforts to protect and sustainably manage natural capital are not keeping pace with the breadth of degradation symptoms depreciating the natural capital base."

"In the long run it is clear that Victoria's natural resource base will significantly degrade if we continue to impart the same management paradigm across the landscape. It is cheaper to adjust and manage our natural resources properly rather than pay the exorbitant repair bill we are accumulating"

"...Current trends for resource condition across Victoria do not reflect the definition of sustainability offered in this report. To reach a level of sustainability a comprehensive new approach is required. The range of strategic documents developed by the State to manage specific degradation issues is impressive. However, we are lacking a coherent system for setting priorities and allocating resources between individual management programs at State level."

(Victorian Catchment Management Council 2002, pp vi & 95).

Importantly, both the Victorian Auditor-General (2003) and the Victorian Catchment Management Council (2002) recommend the development of a statewide framework for integrated natural resource management. These assessments should not be taken as criticisms, but rather as a recognition of the challenges to be met in working towards sustainability.

Summing up, past and current efforts have been useful, and that progress is being made in some areas, however, the overall magnitude of the challenges means that there is a need to do better, which will involve continuing with current programs, but also rethinking and improving our policy and program responses.

While there are a number of ways in which this can be progressed, a clear development in the policy literature and current practice is integration as a key mechanism for progressing environmental sustainability. This paper seeks to contribute to improved approaches to integration, through outlining and discussing how a more integrated approach to natural resource management policy is being pursued within the Victorian Department of Sustainability and Environment. The paper discusses the:

- Theoretical context of policy integration as an essential element of sustainable development;
- Policy and organisational context for sustainable development and policy integration; and,
- Current experience in progressing a more integrated approach to natural resource management.

THEORETICAL CONTEXT: ENVIRONMENTAL POLICY INTEGRATION AS AN ESSENTIAL ELEMENT OF GOVERNANCE FOR SUSTAINABILITY

Environmental policy integration is recognised as an essential element of sustainable development. Lafferty and Hovden (2002) for example, state that one of the defining features of ‘sustainable development’ is the emphasis on the integration of environmental objectives into non-environmental policy sectors. This entails a fundamental recognition that the environmental sector alone will not be able to secure environmental objectives, and that each sector must therefore take on board environmental policy objectives if these are to be achieved” (2002, p1). The connection between integration and sustainability is more obviously seen in the recent adoption of National Strategy for Ecologically Sustainable Development principles in Victoria’s *Commissioner for Environmental Sustainability Act* (2003).

In effect, this means more integrated ways for addressing sustainability issues are needed, because sustainability issues are effectively different to other policy issues: Biophysical systems are complex and interconnected; Environmental impacts often manifest themselves across space and time (eg climate change, ozone depletion, salinity, and algal blooms); Impacts are often cumulative, and; Effects are often irreversible (e.g. loss of biodiversity, severe land salinisation) (see Dovers 1997 and Carter 2001 for more detailed discussions).

The idea of integration is also not new. Both Persson (2002) and Hertin and Berkhout (2002) for example, recognise that the necessity of considering economic and environmental policy together has been emphasised in several classical environmental texts, such as “A Blueprint for Survival” (1972), “World Conservation Strategy” (1980), and “Our Common Future” (1987).

Further, Lafferty and Hovden (2002, p1) state that “although EPI [environmental policy integration] does not in itself constitute sustainable development, it is impossible to conceive of sustainable development without successful EPI.” However, what is meant by the idea of integration?

Two different forms of integration are typically identified as follows:

- *Horizontal* (or inter-sectoral) integration pursues a coordinated and coherent strategy across different sectors (e.g. whole of government approaches);
- *Vertical* (or intra-sectoral) integration focuses on the integrated management of a single natural resource (legislation, policy, governance, investment and delivery aligned) (adapted from Carter 2001, p258).

While this may suggest that environmental policy integration is a relatively straight forward endeavour, this is not the case for a range of reasons.

Firstly, examples of successful integration are less apparent than one would think. For example, Hertin and Berkhout (2003, p40) consider that although the question of how an integrated approach to the environment can be positively implemented has been continuously debated since the 1970’s, the practice of environmental policy making remains largely unchanged. The recent report of the Productivity Commission into the implementation of ecologically sustainable development by Commonwealth Government departments and agencies is instructive in this regard, making it clear that there is considerable room for improvement in current Australian policy practice (Productivity Commission 1999). This challenge is clearly demonstrated by the title of a recent paper by Janicke “*Environmental policy integration is the easy idea that is difficult to implement*”(2003).

Secondly, the concept of integration is more complex than first appears. For example, despite Janicke’s view of integration being an easy idea, Scrase and Sheate (2002) identify fourteen different meanings of integration in the environmental assessment and governance literature, including:

- Integrated information resources;
- Integration of environmental concerns into governance;
- Vertically integrated planning and management;
- Integration across environmental media;
- Integrated environmental management (regions);
- Integrated environmental management (production);
- Integration of business concerns into governance;
- The environment, economy and society;

- Integration across policy domains;
- Integrated environmental – economic modelling;
- Integration of stakeholders into governance;
- Integration among assessment tools;
- Integration of equity concerns into governance; and,
- Integration of assessment into governance.

Wisely, Scrase and Sheate conclude that integration is not a panacea, and that while some approaches to integration are positive, this is not always the case, some approaches to integration may work against sustainable development, while the value of others will be influenced by the circumstances in which they are pursued (2002). In relation to the focus of this paper, it is considered that, there is a need to continue to strengthen our technical understanding of particular issues, while also improving the focus on the ‘system’.

This leads to the issue of how to pursue integration in a way that positively contributes to sustainability. The questions investigated by Hertin and Berkhout (2003, p40) provide a starting point for clarifying these issues: What exactly should be integrated: policy objectives, decision making structures, knowledge and capabilities, or policy instruments? Does it involve a change of balance of power between sectoral and environmental administrations, or is integration a question of expertise and organisational routines?

If integration is to be successful and positive, it therefore needs to be progressed in an appropriate manner: Integration can occur at many levels – and there are a number of ways to pursue integration.

The following section outlines the policy and organisational context within which the latter case study material is occurring. The underlying assumption of this paper is therefore, that:

- Integration is critical for sustainable development;
- Improving integration can lead to better outcomes; and,
- While there are costs to integration, the key operational question is the nature and type of integration required.

POLICY AND ORGANISATIONAL CONTEXT

This section provides an overview of the broad policy settings for how issues of environmental sustainability are being progressed by the Victorian Government. The major ways in which the government is responding to these issues to date, has been through the release of Growing Victoria Together and machinery of government changes, to establish the Department of Sustainability and Environment (DSE).

Growing Victoria Together: Innovative State, Caring Communities was released in November 2001, and articulates the Government's broad agenda for public policy and government, including what it sees as the social, environmental and economic goals for the state over the next 10 years, and how they will be achieved (Department of Premier and Cabinet (DPC) 2001). Adams and Wiseman (2003) provide a more detailed 'insiders' account of the development and rationale underpinning *Growing Victoria Together*.

In broad terms, environmental sustainability is a core element of the Government's policy directions, as is evident from the Government's Vision for Victoria in 2010, where:

- Innovation leads to thriving industries generating high quality jobs;
- Protecting the environment for future generations is built into everything we do;
- We have caring, safe communities in which opportunities are fairly shared, and;
- All Victorians have access to the highest quality health and education services all through their lives (DPC 2001, p6).

Further, 'promoting sustainable development' and 'protecting the environment for future generations' are two of the strategic issues the Government has identified as needing to be achieved if their vision for Victoria is to become a reality (DPC 2001, p6).

Following its re-election in November 2002, the Government announced the establishment of the Department of Sustainability and Environment, to bring together the State's responsibilities for managing Victoria's natural and built environments to provide a strong policy focus on sustainability as a key objective of government (DSE 2003). It is also expected that the Department will help in the achievement of the Government's vision of Victoria as a world leader in sustainability (DSE 2003, p2).

Refinements to the Department's structure were announced in February 2004, to better connect Departmental activity, by improving the flow between broad strategic policy setting, program design, delivery and completion (Neilson 2004). Five outcome oriented groups were established to progress this agenda, covering the:

- Built Environment;
- Water Sector;
- Land Stewardship and Biodiversity;
- Resources and Regional Services, and;
- Strategic Policy and Projects (Neilson 2004).

Across these groups, a range of activities are underway which may contribute to the development of more integrated approaches.

TOWARDS A MORE INTEGRATED APPROACH TO NATURAL RESOURCE MANAGEMENT POLICY AND PLANNING (ACROSS AN ORGANISATION)

An important element of the Department's objective to establish Victoria as a leader in environmental sustainability is the development of "a statewide framework for integrated natural resource management framework in a catchment context to complement the suite of regional catchment strategies and guide state wide investment in land, water and biodiversity" (DSE 2003, p11).

In a broad sense, the integrated natural resource management (INRM) project is a high level policy review project that aims to improve Victoria's approach to natural resource management (NRM) (especially land, water and biodiversity). It differs to other projects in that the primary focus is on improving the alignment of Victoria's natural resource management 'systems', rather than the details of a particular natural resource management system (such as water, pest plants and animals, or native vegetation management).

The project is also organisationally challenging because it works across different program areas within the department. The project design is based upon a recognition of the conceptual and practical difficulties associated with achieving integration: it is being progressed in three stages (integration takes time); seeks to build on and enhance current approaches; and, seeks to consider different elements of integration within a strategic context.

Project staging

Stage one of the project was completed in June 2003 and included the preparation of a Review Paper and Mapping Exercise. The Review Paper considered international experiences in establishing NRM frameworks, and the Mapping Exercise complements the Review Paper, by reviewing 13 Statewide Strategies, frameworks and policy statements for NRM in Victoria. In a sense these activities involved the undertaking of an environmental scan to identify best practice examples from other jurisdictions, and consider their suitability for Victoria.

Stage two, which commenced in July 2003, involves the development of a draft INRM framework. As part of Stage two a series of internal working papers are being prepared as a way of raising and exploring issues that need to be addressed. These will inform the development of the draft framework, and in a sense provide some of the background analysis and evidence for the directions that will be proposed.

Stage three will involve gaining agreement on the framework and the transition plan, which will provide for strategic and staged implementation. The transition plan is seen as a critical element of the framework, as it will outline what steps need to be taken over time to progressively implement, review and refine Victoria's approach to natural resource management. In effect, the transition plan provides for a process of managed change.

Building on, and enhancing current efforts

Over the past 30 years or so, a wide range of policies and programs have been established, and implemented in response to particular environmental and natural resource issues. These policies and programs have delivered many benefits for Victoria.

However, it is also the case that as more and more policies and programs have been established, Victoria's systems of environmental governance and investment have become more complex. While this reflects (at least in part) the complexity of sustainability issues, it also indicates that less attention has been directed to the overall 'system' and improving the coherence and clarity of policies and programs and how they fit together. For example a gap analysis undertaken as part of the project identified that:

- There is no statewide framework that integrates legislation, policy, planning and management covering land, water and biodiversity (28 pieces of legislation, and numerous statewide strategies and funding programs);
- There are no statewide goals and targets for delivering integrated and sustainable land, water and biodiversity outcomes, and there is no consistent approach to developing them;
- It is difficult for regional and local authorities to align priorities with statewide goals and targets;
- The relationship between on-ground expenditure and statewide priorities is unclear;
- The value of knowledge and integrated understandings is not fully appreciated or utilised;
- Monitoring and review is not systemically undertaken; and,
- The links between natural resource management and regional land use planning are poorly established.

A more integrated approach would therefore seem to be particularly useful in a mature system of environmental governance, such as Victoria's, where sectoral and single issues policies and programs have been in operation over the past 30 years or so. It is also recognised that total integration may not be feasible or desirable – diversity enables policy learning – therefore integration should be approached in a strategic manner.

A strategic approach to integration

Building on Scrase and Sheate's (2002) recognition of the many forms of integration, it is also apparent that integration can be approached at various levels and in various ways. Working towards integrated policy is therefore complex, there are no magic bullets.

However, it is considered that integration is best approached in a systematic manner (ie while benefit may be obtained from improving integration within particular program areas, more significant benefits arise from investigating and progressing opportunities for integration in a systematic and whole of department manner).

In line with this, the work of the INRM team is focussed on the following elements of integration:

- A Vision for INRM;
- Identifying INRM outcome areas, and approaches to target setting;
- Enhancing legislative frameworks;
- Aligning policy with outcomes;
- Identifying and investing in priorities;
- Improving knowledge and capacity; and,
- Monitoring, evaluation and reporting.

These elements are closely interlinked as indicated in Table 1, but will be discussed sequentially to give insights into the different elements.

Creating a Statewide Vision, Outcomes and Targets for Natural Resource Management

Establishing an integrated vision, set of outcomes and associated targets is important, as it gives meaning to the idea of sustainability: providing a clear indication of what is to be achieved, across what areas, and within what timeframes.

Vision

The articulation of a vision for natural resource management in Victoria can provide a clear sense of purpose to guide future effort. Possible visions for natural resource management in Victoria being investigated, include.

“To achieve regional environmental sustainability within one generation”

“To achieve measurable regional environmental sustainability outcomes, through aligning investment and delivery processes with statewide policy, legislation, governance, and knowledge management frameworks, in ways that maximise environmental return on investment and lower transaction costs”.

The above examples are provided to give an indication of the different approaches that may be undertaken. The first approach is based upon Sweden’s goal of achieving sustainability within a single generation. The second approach seeks to encompass the different elements of the INRM project and what its aims to achieve.

Identifying Agreed Outcome Areas

The identification of agreed natural resource management outcomes provides a mechanism for focussing effort and measuring progress towards sustainability. The seven outcome areas being considered are consistent with the themes used for national state of environment reporting, and the themes identified as part of the Australian and New Zealand Environment and Conservation Council work to identify core environmental indicators for state of environment reporting (ANZECC 2000).

The development of agreed outcome areas is useful for a range of reasons, principally that they: Provide a coherent focus for policies and programs; Establish links between different programs and frameworks; Align with nationally recognised themes and indicators; and, Provide a mechanism for aligning DSE policies and programs with SOE reporting to be undertaken by the Commissioner for Environmental Sustainability. This alignment is clearly demonstrated in Table 1.

However, while the identification of clear outcomes is beneficial, it is necessary to remember that biophysical systems are interrelated, and so won't align with human defined boundaries that are imposed.

Target Setting

Setting targets provides a clear sense of what is to be achieved, by when. This is very useful for focussing attention, tracking progress, and developing a sense of milestones that have been achieved. Over time, targets would be established for each of the outcome area identified above.

A range of targets are established in the existing suite of strategies, however, no consistent approach to target setting has been adopted, which makes it difficult to obtain an overall sense of what is trying to be achieved, and what progress is being made. There are also gaps in the areas where targets are established.

To improve the coherence between strategies and programs it may therefore be proposed that a clear approach to target setting be established (for adoption over time when existing targets come up for review). Current thinking is that the broad methodology agreed by State and Commonwealth Ministers in May 2002, through the Natural Resource Management Ministerial Council, provides a useful starting point (ie aspirational targets, resource condition targets, and management action targets).

Enhancing the Legislative Framework

DSE Portfolio Ministers (Environment, Water, Planning) are responsible for Victoria's principal environmental legislation. Over time this suite of legislation has been added to, amended, and in some cases repealed, and at any one time effectively provides the legislative framework for environment and natural resource management in Victoria.

Many of the Acts established were innovative pieces of environmental legislation when established and remain effective statutes. For example:

The Environment Protection Act 1970 (which provides for the establishment and operation of the Environment Protection Authority and adopts both an integrated and flexible approach to environmental regulation);

Flora and Fauna Guarantee Act 1988 (which provides for an integrated approach to flora and fauna protection and which has provided a template for biodiversity legislation in other jurisdictions);

Catchment and Land Protection Act 1994 (which provides for the establishment and operation of Victoria's Catchment Management Council and Regional Catchment Management Authorities); and,

Victorian Environment Assessment Council Act 2002 (which provides a statutory framework for strategic land use planning on public land across Victoria, and which builds on previous Acts that established the Land Conservation and Environment Conservation Councils).

Each Act is a product of the specific circumstances operating at the time in which it was enacted. This means different Acts reflect different values. Hence not only have Acts been developed for different purposes, they may also reflect a different regulatory style. It is also recognised that different jurisdictions have adopted a range of different approaches to enacting environmental legislation, and that what works in these jurisdictions may not necessarily work in Victoria.

However, from an INRM perspective, over time integration may be substantially improved by:

- Better aligning legislation with government policy directions, and high level outcomes;
- Updating and streamlining the suite of legislation;
- Identifying and pursuing consistent approaches to legislative reform; and,
- Amending legislation to enhance Victoria's system of environmental governance.

A high level scan of Victoria's principal environmental Acts was undertaken in order to identify opportunities for improving Victoria's legislative framework for integrated natural resource management. The focus of the analysis was on identifying gaps, identifying areas where legislation could be enhanced, and identifying areas where legislation could be streamlined.

Key areas where further attention may be useful included:

Articulating Objectives and Embedding Environmental Sustainability (Framework legislation)—The establishment of natural resource management legislation could articulate Victoria's natural resource management aspirations, identify agreed outcome areas, require the development and five yearly review of a statewide natural resource management strategy, and establish coordination and advisory bodies, among other things.

Reviewing and Enhancing Under-utilised Legislative Tools—It is considered likely that Victoria's current suite of legislation has gaps, a range of statutory policy tools may not be effectively utilised, and there may be questions about the capacity to effectively implement statutory responsibilities. Establishing a legislation review process to identify and progress opportunities for enhancing legislative coverage, undertake regulatory review and consider under-utilised legislative policy tools, and clarify various roles responsibilities has potential to better achieve legislative intentions, and improve environmental performance.

Aligning Policy with Outcomes*Clarifying Program Logic*

Victoria has a wide range of statewide strategies, policies and frameworks related to natural resource management (eg coastal management, native vegetation management, pest plant and animals, biodiversity, salinity management etc). In the absence of clear outcomes for natural resource management the links between these strategies is often not clear (different strategies are informed by different 'program' logics). More clearly aligning policies with INRM outcome areas provides a sense of policy coverage and gaps by mapping the focus and reach of strategies against outcome areas. Other benefits are a strengthened focus on outcomes, less potential for contradictory policy objectives, and a clearer nesting and cascading of strategies.

Improving Policy Design

The design of policies and programs are the principle means for achieving policy outcomes on the ground. Therefore designing policies and programs with the 'right' the mix of policy tools is critical.

Victoria has established, and currently deploys a range of policy tools as part of natural resource management efforts, with many of these being innovative. Notable examples of some of the innovative policy tools include: the Victorian Environment Assessment Council (to undertake strategic land use investigation on public land); the Land for Wildlife Program; the Trust for Nature Program, transferable water entitlements, and the Bushtender Trial.

However, despite the deployment of these and other policy tools, the evidence from the VCMC and other assessments indicates that we need to do better. One way that this can be achieved is through a stronger focus on policy design – more actively considering what range of policy tools need to be deployed to achieve the outcomes desired.

Investment Planning and Priority Setting

Investment is one of the most significant areas of policy integration, specifically: aligning investment with policy directions; improving investment processes; and, priority setting. In some ways the priority of an issue is reflected by the amount of resources directed towards it. A more integrated approach to investment will assist in targeting invest towards agreed outcomes, which will lead to better outcomes.

Firstly, over time investment processes and funding programs should be more clearly aligned with the agreed outcomes areas.

Secondly, there is a growing interest in the adoption of more integrated approaches to investment, such as the Regional Catchment Investment Process being developed in Victoria, lessons from which can be used to further improve investment processes. By contrast, past and present approaches to investment generally rely upon the use of single issue based funding programs, of limited duration and with a project focus. This reduces flexibility and reduces capacity to fund activities with multiple benefits. It also often makes it difficult to identify the links between projects, programs and outcomes.

Thirdly, it is important to identify where effort should be directed. Work on priority setting for salinity and natural resource management has been, and continues to be, undertaken through a range of mechanisms. While acknowledging the value (and limits) of previous work, the Auditor General's investigation into "*Managing Victoria's Growing Salinity Problem*" (2001, p76) recommended that "the Department invest in evaluative tools to measure the socio-economic, environmental and economic impacts of proposed salinity management options. This will provide a basis for sound decision making in terms of identifying appropriate management options and establishing funding priorities". In progressing work in this area, a useful starting point is recognising that priority setting is a complex and evolving activity.

Knowledge and Capacity

Issues of knowledge and capacity are being considered as key elements for making integration work.

Having the right data, information and knowledge is a critical component in progressing sustainable development (Dovers 1995). However, research undertaken for the project has found that the value of these elements is not fully appreciated, let alone utilised. Further, in order to deal with natural resource management in a more integrated way, the data we collect, and the ways in which we transform it into information and knowledge, must also become more integrated. Flowing from this is the need to manage data, information and knowledge in ways which move beyond compartmentalised, or siloed approaches, while still recognising that data collection activities are often undertaken for a range of reasons. Integrated decision making requires integrated understandings.

Questions of capacity, while complex, are clearly central to achieving integrated natural resource management. However, our understandings of the capacities required to successfully progress more integrated approaches to integrated natural resource management are lacking, despite current efforts to understand capacity building. Our current impressions are that approaches to capacity building for natural resource management in Victoria:

- Vary considerably using a range of different approaches;
- Are undertaken in the absence of a strategic framework;
- Are more likely to be issue based than taking an integrated approach;
- Appear to place more emphasis on individual capacity rather than organisational capacity; and,
- Have tended to focus on human capacity building in the past, with social capital.

Work is currently being undertaken that will assist in identifying a policy context for considering capacities for integrated natural resource management, focussing particularly across the areas of policy capacity; business capacity and capacity for delivery.

Monitoring, Evaluation and Reporting

The need for effective monitoring, evaluation and reporting is clear cut – it provides the means for tracking and reviewing progress, and is a key element of an adaptive management approach (see Dovers and Mobbs 1997).

A key element of the INRM project is to improve the alignment of policies and programs with agreed outcomes. As part of this, the intention is that the Government's framework for natural resource management inform, and align with, the framework for State of Environment Reporting that is to be prepared by Victoria's newly established Commissioner for Environmental Sustainability. Under the *Commissioner for Environmental Sustainability Act 2003*, the Commissioner is responsible for preparing a State of Environment Report for Victoria using a framework that is developed by the Commissioner and agreed by the Minister.

As the outcome areas being considered as part of the INRM project align with the themes used in other SOE reporting processes, and therefore should provide a clear framework against which the Commissioner can independently assess Victoria's environmental performance.

CONCLUSION

Victoria has many important environmental assets. Ensuring these assets are maintained and where possible enhanced for current and future generations is an important challenge facing all Victorians.

The INRM project is being undertaken as one element of the Government's efforts to protect the environment and promote sustainable development. In approaching the issues of policy integration the project has sought to balance the need build on existing efforts with the need to articulate a framework for natural resource management.

While recognising that: integration is not easy; there are a number of ways in which integration can be pursued; and, the project is a 'work in progress', the aim is to provide greater clarity of purpose to policies and programs within DSE, and also improve the links between policy, business delivery, implementation and review.

In effect the project is seeking to establish mechanisms for managed change for sustainable development. At a very minimum it can move the debates forward.

More broadly, integration should not be seen as a panacea, nor should it be a case of throwing the baby (the good parts of existing efforts) out with the bathwater (the parts of existing approaches that need changing). However, within this context, policy integration offers many organisational and policy benefits including:

- Contributing to better on-ground outcomes;
- Providing a coherent direction and context for effort;

- Improving linkages and provide 'glue' between different elements of natural resource management systems;
- Streamlining and enhancing, rather than adding to or complicating, systems of environmental governance;
- Lowering transaction costs by clarifying the desired objectives and priorities for investment;
- Minimising the potential for perverse incentives and negative side effects;
- Improving the balance of investment between drivers/ causes and symptoms, and;
- Driving innovation through improving the linkages and feedback mechanisms between different elements.

LINKING VISION, OUTCOMES, TARGETS, POLICY, BUSINESS AND DELIVERY, WITH INDICATORS: AN INRM PERSPECTIVE

Draft Vision for NRM: Sustainability in a Generation (What do we want to achieve?)								
<div>➔</div>								
Environmental Sustainability Outcomes from an INRM perspective	Victoria's Natural Resource Management Framework (How will we know if we've achieved our goal – what might environmental sustainability look like?)							
	Healthy Land Systems	Maintain and Enhance Biodiversity and Ecological Integrity	Health Rivers and Waterways	Clean Air and Atmosphere	Vibrant Communities and Livable Human Settlements	Respect and Preserve Cultural Heritage	Sustainable Marine and Coastal Zones	
	What are some of the milestones that need to be achieved along the way?							
	Honour existing targets, but review over time							
Policy, Business and Delivery. Programs and their contribution to Outcomes.	By what means can we achieve environmental sustainability?							
	Current: What programs and knowledge do we have?							
	Future: What programs and knowledge do we need? – increased focus on program design and mix of policy tools							
Monitoring, Evaluation and Review	How will we know if we are making a difference? The Commissioner's SOE Report provides a useful mechanism for obtaining independent feedback and advice to Government on the effectiveness of programs. The framework could be based on the core indicators for SOE reporting developed by ANZECC, as they align with the Outcomes areas listed above.							

REFERENCES

- Adams D and Wiseman J (2003) Navigating the Future: A Case Study of Growing Victoria Together, *Australian Journal of Public Administration*, 62(2), pp11-23.
- Australia and New Zealand Environment and Conservation Council (2000) *Core Environmental Indicators for Reporting on the State of the Environment*, Environment Australia, Canberra.
- Carter N (2001) *The Politics of the Environment: Ideas, Activism, Policy*, Cambridge University Press, Cambridge.
- Department of Premier and Cabinet (2001) *Growing Victoria Together: Innovative State, Caring Communities*, State of Victoria, Melbourne.
- Department of Sustainability and Environment (2003) *2003-2006 Corporate Plan*, State of Victoria, Melbourne
- Dovers S (2001) *Institutions for Sustainability*, TELA Series, Australian Conservation Foundation, Melbourne.
- Dovers S (1997) Sustainability Demands on Policy, *Journal of Public Policy*, 16(3), pp303-318.
- Dovers S (1995) Information, Sustainability and Policy, *Australian Journal of Environmental Management*, 2, pp142-156.
- Dovers S and Mobbs C (1997) An Alluring prospect? Ecology and the requirements of adaptive management, in Klomp N and Lunt I (eds) *Frontiers in Ecology*, Elsevier Science, Oxford.
- Eckersley R (1992) *Environmentalism and Political Theory: Towards an Ecocentric Approach*, UCL Press, London.
- Government of Victoria (2002) *Our Forest Our Future, A Government Statement by the Premier and Minister for Environment and Conservation*, State of Victoria, Melbourne.
- Hertin J and Berkhout (2003) Analysing Institutional Strategies for Environmental Policy Integration: The Case of EU Enterprise Policy, *Journal of Environmental Policy and Planning*, 5(1), pp39-56.
- Lafferty W and Hovden W (2002) *Environmental Policy Integration: Towards an Analytical Framework*, Report No 72, Program for Research and Documentation for a Sustainable Society, University of Oslo, Oslo.
- Janicke M (2003) Environmental Policy Integration: The Easy Idea that is all but Easy to Implement, Paper presented to National Europe Centre Conference "Environmental Policy Integration and Sustainable Development" Shine Dome, Gordon Street, Canberra, 19-20 November 2003.
- Morgan G (2001) *Landscape Health in Australia: A Rapid Assessment of the Relative Condition of Australia's Bioregions and Subregions*, Prepared for Environment Australia and National Land and Water Resources Audit, Commonwealth of Australia, Canberra.
- National Land and Water Resources Audit (2001) *Australian Dryland Salinity Assessment 2000*, Commonwealth of Australia, Canberra.
- Neilson L (2004) Information from the Secretary announcing new organisational structure. Department of Sustainability and Environment newsletter, Melbourne.
- Persson A (2002) *Environmental Policy Integration: An Introduction*, draft manuscript, Stockholm Environment Institute, Stockholm.

- Productivity Commission (1999) *Implementation of Ecologically Sustainable Development by Commonwealth Departments and Agencies*, Report No 5, Commonwealth of Australia, Canberra.
- Scrase J and Sheate W (2002) Integration and Integrated Approaches to Assessment: What do they mean for the Environment? *Journal of Environmental Policy and Planning*, 94, pp275-294.
- Victorian Catchment Management Council (2002) *The Health of Our Catchments: A Victorian Report Card 2002*, State of Victoria, Melbourne.
- Victorian Auditor-General (2003) *Report on Public Sector Agencies: Results of Special reviews and 30 June 2003 Financial Statement Audits*, No 52 – 2003, State of Victoria, Melbourne.
- Victorian Auditor-General (2001) *Managing Victoria's Growing Salinity Problem*, State of Victoria, Melbourne.