

Sustainability – Are we there yet (and would we know it if we got there?)
or
**Measuring the effectiveness of environmental policy through state of the
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Abstract: Environmental policy making and its implementation has in the main suffered from a lack of credible review and evaluation. This has resulted in a generally poor understanding of policy effectiveness, or success, especially in terms of outcomes achieved and their linkages to the policies that underpin them.

This can be attributed in part to the lack of informed policy ‘learning’ from one corresponding policy to the next. This lack of ‘closing the policy’ loop has a raft of implications for environmental policy-making and its effectiveness. Future policy and decision-makers have little understanding whether previous decisions their on-ground implementation or outcomes which may have occurred have been achieved by sound policy or a far more ad hoc policy approach. Similarly, stakeholders cannot be assured either that resource allocations are linked to sound policy deliberation and or that specific monitoring or data collection programs are as deficient in scientific ‘continuity’ as they are in usefully informing or guiding policy-related outcomes.

Without such a review and evaluation process to close the policy ‘loop’ it could be argued that a significant disconnect exists between the success of environmental policy formulation and its effective implementation.

This paper provides the preliminary exploration of this theory utilising the capacity of state of the environment reporting practice as a policy review and evaluation tool. The take-up of state of the environment reporting findings into subsequent policy-making is examined and discussed within theoretical frameworks including organisational learning theory as a means of explaining the apparent disconnect between state of the environment reporting and improving future environmental policy outcomes.

This paper forms the basis of the author’s preliminary PhD research entitled, Finding the ‘elegant connect’ between environmental policy and state of the environment reporting. Further data and research will be obtained from state of the environment practitioners, their respective SoE reports and a sample of policy-makers intended to utilise the findings of these reports. Further findings of this will be published as this PhD progresses.

SUSTAINABILITY, ARE WE THERE YET (AND WOULD WE KNOW IF WE WERE)?

What do we mean by ‘good’ environmental policy making?

Environmental policy is assumed to be of paramount importance, not least, as it involves anthropogenic management of the ecological systems and processes we rely on totally for our clean air and drinking water, our arable soils from which our agriculture is produced, biodiversity that incorporates areas of natural habitat and the plant and animal species contained within, and of course the remaining natural resources consumed by humans to satisfy their material needs on a day to day basis (Shields et al, 2002).

The intent and purpose of environmental policy and implementation reflects the knowledge and acceptance that human development and expansion is having a detrimental impact on our environment (Lubchenco, 1998; Wells, 2003).

In this context, ‘good’ environmental policy incorporates a number of key elements (set out in Table 1) which in turn reflect what might be considered a more robust policy process (various elements reflected in Stone, 1988; Solar & Shields, 2000; Shields et al, 2002; Will, 2004; Pollard et al, 2008).

Insert Table 1: Elements of a comprehensive environmental policy making process

The path to sustainability is often mapped out via a path of strong environmental and social policy, a comprehensive environmental management process integrated across relevant sectors and strong decision-making leadership (Ross & Dovers, 2008).

But as a society how do we know whether we are on the right path or progressing toward these preferred outcomes or even in fact whether we are heading in a particularly useful or meaningful direction when it comes to sustainability?

Environmental policy that responds to critical problems confronting society or local communities are often lauded, or assumed to represent, important strands of the sustainability journey that needs to be taken. Achieving sustainability or moving towards sustainable outcomes are often key arguments behind the decisions or processes that instigate these policies in the first place (NSW EPA 2000; NSW EPA 2003).

Past practice has often seen singular environmental policies developed to address specific environmental problems. More recently there is a trend to a more holistic or overarching policy or strategic approach in recognition of issue interdependence and influence e.g. land-based pollution and impacts on marine conservation; energy conservation, transport and climate change.

Many individuals in society might assume that after decades of effort and investment in formulating and reviewing environmental policy, sound frameworks for development and accountability have emerged to ensure robustness and reliability in the application of the environmental policy. If the elements in Table 1 are recognised as significant features of the policy process it might be assumed they have a systematic and wide application.

Based on the extensive literature and record of policy development this is certainly not the case. There are still exhaustive analyses, reviews, best practice examples, case studies and methodologies that indicate ongoing difficulties and gaps associated with policy development, policy implementation, effective monitoring, evaluation and reporting on the results delivered.

Within the more recent literature there appears to be an increasing frequency of commentaries on the extent of these difficulties, with much of these reflecting on governance processes, access to quality information and limitations caused by policy and decision-makers operating within networks of professional, scientific, political or even social individuals (Shields et al, 2003; Will, 2006; Gore and Wells, 2009; Juntti et al, 2009).

Ensuring the success of a policy is not necessarily a key feature of the original policy development. Success sometimes appears as an output of the process itself, as though just having the policy is the means to delivering the desired or expected physical or behavioural changes on the ground. It seems that even if each of the elements identified (within Table I) were incorporated within the policy setting it does not appear to ensure policy success. While this reflects the complexities or difficulties within each of these elements it indicates the importance of reviewing or learning from the policy process to improve and guide future policy formulation and implementation.

Key questions to ask in each new or subsequent policy setting include, 'What was the previous policy statement or direction; What was achieved in that previous policy setting (behavioural or on-ground) and perhaps when one policy clearly follows or replaces another, 'What is the policy learning (in terms of process or implementation) from the previous policy position?

Is there a way of examining the effectiveness of environmental policy, as mirrored in terms of the elements of Table 1 and with a particular emphasis on responding to the initial premise that good policy should be capable of sign-posting society along its path to sustainability?

One such framework available to this researcher for this review and evaluation is through the lens provided by 'state of the environment' or SoE reporting. This form of reporting has a number of advantages and synergies that arguably make it ideal for an examination of the effectiveness of environmental policy and policy implementation.

Connecting with SoE reporting

One of the key reasons for examining the effectiveness of environmental policy through state of the environment reporting is the intended function of this form of reporting and its relationship with environmental policy. A key function attributed to SoE reporting is to provide an ‘early warning’ system for policy and decision-makers on the environment and for those responsible for managing our natural resources into the future.

SoE reporting, sometimes known as SoER, attempts to give its audience the definitive environmental report card similar in manner to a conventional school report card for individual students. Another useful analogy for SoE reporting is the prognosis it provides as per the health status of a patient having its regular medical check-up. The patient or the student in this sense is typically, the state of the environment at the local government in NSW where this form of reporting is mandatory for all local Councils, the state of the environment at the Territory, State or Commonwealth government level where these reports are prepared, city levels internationally where they are prepared or even for the state of environment globally for the purposes of non government or United Nations organisations respectively.

At various regional settings there are State of the City reports, State of the Catchment Reports, State of the Marine Environment Reports, State of the Forest reports and State of the Parks reports, each prepared on a recurring frequency at regional, national or international levels. Each reporting organisation tends to invest substantial time and effort to collect and interpret their relevant and respective scientific and statistical data to summarise the *condition* of their namesakes (i.e. city, catchment, park etc), the *pressures* occurring on these condition and *responses* underway to ameliorate, address or resolve these pressures and ensure the conditions remain intact as much as practicable for future generations. This *pressure-condition-response* approach to SoE reporting remains fairly constant and consistent regardless of the geographical areas under examination.

In Australia, this form of reporting commenced earlier in some jurisdictions than others, but has been underway for more than two decades. Reporting frequencies continue to vary between two, three, four or five year reporting cycles however five yearly appears a preferred approach to enable more of the changes in condition, be they positive or negative, to show up in data collection and its interpretation.

In terms of Australian reporting practice and so a reason for its analysis in this research, estimates indicate preparation of more than 30 Australian jurisdictional SoE reports, more than 400 comprehensive local government SoE reports and an additional 1,200 annual local government SoE reports in NSW alone (Maganov, 2009).

In recognition of the links and relevance of sustainability to these reports, the most recent SoE reports of some jurisdictions have included additional commentaries, data and analysis attempting to represent the extent of sustainability progress underway within the reporting jurisdiction(s). Even prior to these more recent inclusions, many of the SoE reports identified with the concept of ecologically sustainable development (NSW SoE, 2000; NSW SoE, 2003; NSW SoE, 2006; Australian SoE 2001;

Australian SoE 2006). For these and many other reports, the “aspiration to be policy relevant points to the need of embedding the knowledge on sustainability further into the fabric of decision-making” (Hezri & Dovers, 2006).

Stemming originally from a 70’s era of community ‘right to know’ principles, SoE has since transitioned to become an “essential ingredient for effective sustainable development policy making and action planning” (Rump, 1996). The story-telling within SoE reporting has focused on the backgrounds to the emerging environmental problems and issues confronting societies (*conditions*), how they arose (*pressures*), and perhaps more importantly, the actions underway or required (*responses*) to tackle the problems and potentially resolve them into the future.

SoE reporting to some extent sums up the ‘story-telling’ in a manner that corresponds to most of the policy-making elements outlined briefly above (see Table I). From the problem or issue identification, the policy formulation and method of implementation, actions taken as part of the policy, and especially the post-implementation results or outcomes.

Importantly, SoE reporting is institutionalised organisationally and has an historical application across existing scientific, governance, policy and decision-making frameworks so much so, that this form of environmental reporting or accounting is grounded in legislation or regulation across almost all Australian jurisdictions and in various forms across cities, countries and clusters of environmental themes in locations around the world. This conforms to a “criterion of resonance” where the twin focus of content and legitimacy cultivates a policy relevance with its intended audience (Hezri & Dovers 2006).

Put simply, SoE reporting is a humanistic construct aimed at communicating a complex collection of information covering; the state of local environmental *conditions*, a scientific representation of the various settlement *pressures* exerted on these conditions (particularly from increasing human populations), and the range of *responses* underway or required to reduce or to minimise these pressures. This latter element often incorporates the formulated policies, targets determined where applicable, monitoring data, as well as the results or outcomes from the policy implementation i.e. programs, actions, interventions.

This *pressure-condition-response* approach (with some variation) has dominated the reporting model or framework for state of the environment reporting since it commenced. Hezri and Dovers (2006) claim this approach has been the most influential model for environmental reporting practitioners.

The format of the SoE reporting model typically presents 5 to 6 key themes (for instance, sustainability, human settlements, water, land, biodiversity and the atmosphere) and 30 to 60 major environmental issues discussed within these themes). A reporting hierarchy breaks down further into sets of environmental indicators that report on these issues, and which in turn are made up of multitudes of quantitative or qualitative datasets or information clusters.

Rump (1996) describes key characteristics of SoE reporting as:

- Enabling greater understanding of environmental trends and conditions by all or many of the community stakeholders, decision-makers or natural resource managers;
- Providing a firm basis for environmental policy development and its implementation; and
- Ensuring monitoring, measurement and communication of progress toward so-called sustainability goals and objectives.

Briggs argues a key relevance between SoE reporting and policy-making is “.... Its ultimate aim [SoE] is to improve environmental management and protection by helping to inform and direct policy development” (Briggs, 1993).

In a review of SoE reporting in South Africa, Will (2006) indicates that SoE reporting is one of the most important tools available to provide critical feedback on the impact and effectiveness of policy interventions, programs or other activities.

Wells (2003) goes even further in highlighting that effective policies and programs aimed at maximising environmental protection and conservation start and end with such reports.

The Victorian Government’s Parliamentary Public Accounts and Estimates Committee (PAEC) conducted a 5 year inquiry into environmental reporting and accounting and summed up the SoE reporting and environmental policy relationship, ...”SoE reporting provides a measure of the effectiveness of environmental policies and highlights where changes might be needed in policy direction” (PAEC, 1999).

A key item for consideration in this research is, if SoE reporting has been undertaken over the past two decades in Australia and has such a potentially strong relevance to and relationship with environmental policy making, is there a disconnect between the two? Reporting practitioners indicate a distinct lack of success in utilising SoE reporting to inform and guide policy development and environmental decision-making. Its origins indicate this was one of the major reasons for this form of reporting (Wells 2003; Maganov 2005; Will 2006). Does SoE reporting suffer a low take-up in its own right or does it reflect a poor record of success in terms of policy implementation or delivery of environmental policy objectives?

Where is the disconnect?

Arguably, SoE reporting matches Weber’s instrumental rationality of contemporary governance that “more and better knowledge will positively influence the actions taken by decision-makers”, (Hezri & Dovers, 2006). If environmental policy-making is of paramount importance and there are existing institutional frameworks as well as mandatory requirements to prepare state of the environment reports capable of informing and guiding policy development and implementation, what might be behind an apparent disconnect between the two? How is that SoE reporting is not well utilised to inform and guide policy development and it’s implementation, if that was, or is, a primary driver for this form of reporting?

In his analysis of the role of expertise in governance processes, Grundmann (2008) reflects on Latour's claim that contemporary society has a belief that human and non-human worlds can operate separately from one another. In terms of knowledge, Latour argues the perception that facts about nature, as well as value judgements about what we ought to do about those facts are seen separately, despite the reality of the situation confronting us.

Will (2006) points out the influence of different backgrounds and up-bringing of individuals on policy making. He argues these differences contribute to fundamental differences in how individuals see and respond to environmental management, and the application of potential problem solving initiatives or programs via environmental policy and its implementation. Will introduces us to the ethical and philosophical phenomenon that Dryzek refers to as the "politics of the Earth" and goes on, as do others, to highlight the important influence of an individual's 'network' of people and personal views to the way in which policies are formulated and followed up (Wills, 2006; Pollard et al, 2008; Juntti et al, 2009). Like Hezri and Dovers (2006), Will (2006) also stresses the dominance in these influences of informational access and decision-making governance processes.

This explanation adds weight to the "actors" and "discourses" view of Norman discussed by Hezri and Dovers (2006). In his discussion on the acceptance of performance reporting indicators Norman (2002) identifies what he describes as "true believers", "pragmatic sceptics" and "active doubters" (Hezri & Dovers, 2006). These constructs reinforce the possibility that these groups of "actors" through their interactions with one another are either more resistant or more receptive to the acceptance not only of performance indicators themselves, but the types of reports that capture and represent the associated data and then communicate on the findings of these indicators.

Shields et al (2002) argues further that the individual's value sets and actions can be represented as a hierarchy of value objectives which individuals then go about fulfilling. These incorporate 'terminal' values, described as personal e.g. happiness, and freedom, and social e.g. equality and community; and 'instrumental' values comprising moral values e.g. honesty, kindness as well as competence values e.g. logic and rationality. In an environmental policy context, Shields et al (2002), goes on to argue that a hierarchy of objectives reflecting these values can nurture or stifle a particular personal or professional position but can be shifted if understandable information is delivered in a satisfactory and accessible way for these individuals.

Wills (2006), Wells (2003) and Shields et al (2002) concur around the capacity of relevant or scientific information influencing individuals or what Shields et al (2002) presents as either an objectives hierarchy of the individual or of the broader society. Wells (2003) and Wills (2006) suggest the need to better tailor the information presented in these kinds of reports to the needs of the audience. However, Shields et al (2002), suggests a higher level of data aggregation also enables a useful distilling of information even though careful consideration is still required as to its content and delivery. As Shields et al (2002) states, "scientists seek knowledge and an understanding of the world policy-makers need information that will help them devise workable policies and the general public just want to know if their goals and objectives are being met"

But Grundmann (2008) argues that reality is farthest from the truth when it comes to a traditionally linear model of science-based knowledge influencing the rationality of decision-making (also Hezri and Dovers, 2006). Grundmann (2008) says it is impossible to separate society or politics in the acceptance of this information.

Hezri and Dovers (2006) offer some explanation by drilling further into the influence of indicators selected for and on which much of the story-telling in SoE reporting is based. They find the scientific or statistical data underlying the environmental indicators are often seen as difficult to interpret or understand in relation to the political context of the day. They go further asserting the complexities of performance indicators are themselves difficult to institutionalise and are dubious that the content of such indicators are scientifically adequate to inform sustainability policy areas (Hezri & Dovers, 2006).

An interesting set of organisational related observations are provided by Argyris on organisational learning theory (Smith, 2001), particularly in regard to the capacity of organisations to move beyond their methods of governance, the development of their own action 'strategies', and the consequences of the organisational approach taken.

Argyris talks of Model I and Model II organisations where organisations practising the former are involved in 'single-loop' learning and Model II organisations are considered as 'double-loop' learners. The distinction that Argyris makes between the two models reflect the different ways in which organisations tend to operationalise or 'internalise' their corporate goals, their values, plans and rules without necessarily questioning or committing to them. 'Single-loop' learning organisations are even able to satisfactorily support their corporate requirements, ticking off, checklist style, the consequences expected from their own 'objectives hierarchy' (see Shields et al, 2002). Argyris indicates they may even be able to recognise and rectify mistakes realised within their processes or procedures, but mostly these organisations are about being seen to tick off their requirements in an efficient format without making substantial changes from the lessons available. This implies a very slow or nil level of integration between internal governance, strategy setting or outcome related processes (Smith, 2001).

'Double-loop' organisations meanwhile achieve something more meaningful in terms of organisational learning and behaviour. Operationalisation of their corporate goals, values, plans and rules means they understand the commitment required to being accountable for and taking actions to realise their corporate goals and values. Argyris believes strongly that double-loop learning is essential "if practitioners and organisations are to make informed decisions in rapidly changing and often uncertain contexts" (Smith, 2001).

In a further consideration of differences between Model I and Model II organisations, Model I entities demonstrate what Argyris refers to as an 'espoused theory of practice' while Model II entities demonstrate a 'theory in practice' approach (Smith, 2001).

This view can be further examined in terms of characteristics identified by Argyris for Model I and Model II organisations (see Table 2). There is likely to be a parallel

context represented in Model I and Model II organisations in terms of policy development and implementation, especially environmental policy and its Operationalisation. It would seem reasonable to extend the possibility that Model I behaving organisations practicing what Argyris' refers to as 'espoused theory' are of the view that contributing to or completing the SoE report is satisfactory without committing authentically to what may be described as the findings of the report. In a striking extension of the hierarchical objectives identified above, the Model I characteristics are on display for a suite of similarly operating organisations each contributing to the preparation of the SoE report but not committing to their findings or the implications of these findings to improved environmental management. It begs the questions as to whether a whole cluster of similar Model I organisations are capable of practicing 'espoused theory' as a group despite the findings or expectations of follow up that each report generates.

Insert Table 2: Characteristics of Model I and Model II organisational learning attributes

Implied in the success of Model II organisations is the ongoing capacity for cultural change, organisational improvement and integration across different areas of the organisation. Ross and Dovers (2008) present a case that public administration systems are less likely to successfully integrate policy frameworks across their own structures and process mechanisms, and even less likely to smooth out differences between the suite of social, environmental and economic considerations making up sustainability.

They point to the definition of such integration by Lafferty and Hovden (2003) which reflect environmental objectives necessarily being encapsulated into non-environmental policy areas, as well as bundling sets of environmental consequences into other policy assessment responsibilities regardless of their environmental immediacy.

Ross and Dovers (2008) talk about the limited success or application of integrating sustainability goals and principles by organisations, particularly due to its impact and implications across all sectors of an organisation, a lack of political willpower or 'champions' to advocate on its behalf and even a clash between such integration with the "specialised hierarchy" within public administration systems". Some of these are contrasting features as reflected in Table 3.

Insert Table 3: Environmental policy integration (Ross and Dovers, 2008)

All of this suggests a truth in Latour's earlier observation that individuals can see facts but act differently from those facts in reality (Grundmann, 2008) and translate readily to the Model I and II types as described by Argyris (Smith, 2001). And as with Normans "actors" and "discourses" in Hezri and Dovers (2006), organisations appear capable of committing or contributing to the development of an environmental policy or preparation of an SoE report but can apparently dismiss or disassociate themselves from the requirements of the policy or subsequent SoE findings

This corresponds to the differences represented in key success factors for policy integration described by Ross and Dovers (2008) as shown in Table 3. Organisations demonstrating leadership in sustainability seek to implement a cultural change across all areas of their organisation, embed sustainability principles within these areas and enable practical change by all of its people. This is in sharp contrast to what Ross and Dovers (2008) indicates is a more commonly practiced organisational behaviour of weak sustainability leadership, fragmented implementation, resistance to change, low levels of trust and poor follow up on sustainability initiatives due to lack of resources or lack of commitment.

Connecting up the pieces – a way forward

After a decade or more of institutionalised SoE reporting, is there a way forward in making environmental policy and its implementation more accountable through this type of reporting?

In 2005, the Commonwealth Government conducted an inquiry into Sustainable Cities providing unequivocal recommendations for an Australian Sustainability Charter which would contain clear targets around water, transport, energy, building design and planning, and indicating these new responsibilities would come under the administration of a new and independent Australian Sustainability Commission (HoR, 2005).

In the absence of a formal government response to these recommendations the House of Representatives Standing Committee on the Environment and Heritage undertook a number of additional inquiries into aspects of developing a Sustainability Charter and a Sustainability Commission for Australia (HoR, 2006; HoR, 2007). Adding to this push, one of the key ideas that arose from the Prime Minister's 2020 Summit held in Canberra shortly after the election of the new Rudd Government and still unanswered is the need for an Australian Sustainability Commission and a National Sustainability and Climate Change Policy (Aust 2020 Summit, 2008).

As Ross and Dover (2008) indicate, a 'champion' or advocate for the environment in the form of an Australian Sustainability Commission may be able to turn Model I organisations into Model II, 'theory in practice' organisations and in doing so overcome the hierarchal objectives and values they appear to demonstrate.

Conclusion

Environmental policy, if applied successfully, can show the way forward, informing and guiding decision-making so current generations might ensure a similar or matching level of environmental abundance and certainty for future generations.

As with any policy setting, health, educational or economic, there is a reasonable assumption that policy and decision-makers in a generalised set of circumstances are legitimately attempting to create and implement policy to benefit the widest number of individuals in our society. Yet, when it comes to environmental policy there

appears to be a substantial disconnect in enacting the policy goals and ensuring and understanding whether the policy goals and objectives are achieving meaningful outcomes either through on-ground changes or in terms of community behavioural change.

As Victoria's 5 year Parliamentary inquiry into environmental reporting and accounting determined, there has been a substantial investment in preparing SoE reports and even with the lack of knowledge available they have gone a long way in establishing a certain factual basis to many important environmental problems facing society. Their report goes on to state, "Having identified problems the next challenge is to formulate and implement policies which are designed to address those problems – and then to monitor whether those policies are actually achieving what they set out to do" (PAEC, 1998).

Without a strong 'connect' between this form of reporting and environmental policy making and implementation, there is a diminished opportunity to establish the value or benefit of the policy or its substantive influence or relevance to the delivery of established policy goals and objectives.

The next stage of this research is to examine a number of the consistencies or differences in various state of the environment reports and to survey SoE reporting practitioners, policy and decision-makers for their views on the extent that SoE reporting is being used to guide and inform environmental policy and its implementation.

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1	Issue identification	Policy issue identification, via scientific determination or recognition of issues or problems (also see Dovers, 1994) arising from human activity.
2	Policy formulation	Policy development aimed at responding to the identified problems identified. Formulation includes detailing the range of policy options or directions necessary to ameliorate or respond to environmental-related issues. This formulation may include consultation carried out amongst a community of 'stakeholders'.
3	Policy implementation <i>(including decision-making around the allocation of resources to achieve the implementation)</i>	Implementation of the agreed policy, often via environmental decision-makers located within a bureaucratic, administrative or political setting and including their approval or allocation of scientific or financial resources to deliver on the specific environmental programs being implemented or into a regulatory or legislative implementation framework for others to follow.
4	Achieving results <i>(from implementation programs)</i>	Delivery of on-ground or behavioural changes linked to the problem identification, agreed policy directions and subsequent investment in and interventions by delivery programs or regulatory frameworks.
5	Monitoring of, and Communicating the results achieved	Monitoring of and / or communication about changes or outcomes achieved from the environmental or related programs, regardless of whether they represent on-ground or behavioural changes over a limited or wide community audience (or part thereof).
6	Target setting	Nothing to do with a so-called 'target' audience. Targets represent identification, agreement and adoption of potential or realistic, operational or aspirational, measurable outcomes or objectives which when met are likely to converge with the agreed policy outcomes or objectives. Targets are often avoided due to difficulties in their identification, particularly at the early stage of the policy-making when objectives may not convert easily to measurable on-ground outcomes. Once determined however, they can indicate in a meaningful way, the extent of progress being made (via distance to target). This element if carried out successfully provides an important context to the implementation, monitoring, communication and evaluation stages of the environmental policy-making process.
7	Policy Learning and Evaluation	Policy evaluation and learning from the existing and previous policy measures taken (a substantially neglected aspect is the policy 'learning' derived from

		previous policy processes and documents).
8	Refining or Adjusting Policy Direction	Responding to the findings of the evaluation or review, or learning from the previous or existing policy outcomes by adjusting or revising the existing policy (often a policy review date or evaluation process can be developed into the policy itself). Some responses may reflect a series of recommendations stemming from the evaluation or review process.

Table 1: Elements of a comprehensive environmental policy making process

Model I	Model II
Achieving the purposes as the 'actor' defines it	Free and informed choice
Win, do not lose	Internal commitment
Emphasise rationality	Valid information
Primary strategies around controlling the environment and task unilaterally and with	Primary strategies enabling shared control and participation in designing and implementing actions
Consequences that include defensive relationships, reduced production of valid information and little public testing of ideas.	Operationalised by attribution and evaluation based on relatively direct observable data, acknowledging and responding to conflicting views and encouraging the public testing of evaluations presented

Table 2: Characteristics of Model I and Model II organisational learning attributes

Key success factors	Observations on current practice
Leadership, cultural change and capacity building	Poor leadership, especially in the face of resistance by vested interests
Embedding sustainability in structures and processes	Some increasing understanding and application of environmental sustainability principles but many gaps in knowledge
Policy integration is more than the sum of its parts (individuals strategies, policies, structures or processes)	Fragmented policy integration and poor communication between those making decisions and those impacted by decisions
Development of long-term evidence based approach (with persistence and vigour of implementation crucial)	Failure of environment and sustainability initiatives due to a lack of allocation of appropriate resources
Strengthening decentralised implementation arrangements	Lack of trust and leadership keep strong control and command approach

Table 3: Environmental policy integration (Ross & Dovers, 2008)