1 Introduction[1]

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Environmental amenities like clean water and air, or natural attractions like the Great Barrier Reef or the Snowy Mountains, are fundamental to the Australian community's quality of life and sense of wellbeing. There has been a tendency to take them for granted, as enduring features of our way of life. But increasing population and economic pressures are changing this, posing threats to some important environmental 'services'.

While climate change is the biggest and globally most pervasive issue currently receiving policy attention, many others of purely domestic origin and reach are also manifest. Their impacts are felt not just by sections of the community with a heightened sense of the value of the environment, but also by many households and enterprises whose activities and interests are affected in various ways. Reduction in available water in the Murray Darling basin, for example, impacts directly and indirectly on a range of industries, other than irrigated agriculture. Runoff from disturbed acid sulphate soils poses a threat to much of Australia's coastline, including sections of the Great Barrier Reef. Dryland salinity is reducing arable land in many inland areas. The policy challenges loom large, as exemplified by the current problem in sourcing the environmental flows to revive World Heritage wetlands like the Coorong.

As in other countries, governments in Australia are responding to threats to the environment in various ways, with varying effectiveness. The nature and extent of policy responses depend in part on the pressures brought to bear by the perceived consequences of inaction. They also depend on how strongly the community feels about environmental protection relative to other goals. The policy response must take into consideration how much is being achieved by individuals and the private sector, as well as the potential effectiveness and efficiency of policy interventions. Indeed, concerns raised about environmental policy measures often have less to do

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with their objectives than with their effectiveness, the regulatory burdens they impose and the potential for unintended consequences.

This conference principally addresses two questions central to developing good environmental policy:

- First, under what conditions can governments improve environmental outcomes? The answer to this question will determine what are feasible objectives for environmental policy.
- Second, how should governments intervene to ensure effective and efficient results? The answer to this question will guide the choice of policy instruments.

1.1 Why this conference?

Over the past decade or so, the Commission has undertaken inquiries, prepared submissions, and pursued its own research on a range of environmental policy topics. The focus has typically been on the efficiency and effectiveness of different policy options rather than the objectives of policy, although the appropriateness of the objectives is sometimes brought into relief by the analysis.

Environmental policy instruments have proven difficult to formulate. It is often easier to identify what is wrong with them than to design new ones with confidence in their efficiency and effectiveness. Coase's insight that externalities create reciprocal costs and benefits highlights the need to account for the costs of actions to ameliorate externalities as well as the benefits of reducing harmful effects. And, as we know from experience, the efficacy and efficiency of measures to address externalities is complicated for a number of reasons including:

- *non-separability of many environmental services.* The one resource, whether an area of ocean or of forest, often delivers multiple services to multiple users, for economic and other purposes
- *high cost of excludability* from some if not all of the services. There will generally be potential for at least some free riders, and the transactions costs of excluding them will often exceed the costs their use imposes on others. This is particularly the case where the consumption is 'non-rival' (as for non-use benefits from a resource that derive simply from its existence)
- considerable *scientific uncertainty* about the extent of the threat to some environmental services or the effectiveness of proposed actions to remove or abate it. This raises questions about the relative merits of a precautionary approach — moving to protect resources when the extent of a problem is

uncertain — versus delay, not only for the cost savings, but to enable development of better information and solutions that are more effective

- *equity concerns* — whether traditional use of the resource has created an entitlement, or those using the resource are responsible for the deterioration in environmental services, the requirement that policy be seen to be fair is obviously important. This raises issues about compensation and how those who have not been 'responsible' users should be treated
- *institutional arrangements* that are not aligned with the nature of the resource nor the ideal policy instrument. Australia's federal system has considerable strengths, but at both the local and national levels institutional arrangements can hamper policy to address local or national environmental issues. For the biggest environmental challenge — abatement of greenhouse gas emissions — the adequacy of *international* institutions is also a key issue.

These characteristics of environmental problems constrain and help define the policy instruments that will be effective and efficient. This conference is motivated by the need to learn from accumulating experience about what works and why.

1.2 The effectiveness of current approaches to environmental issues

The first session, therefore, provides a stocktake of current approaches to environmental issues and their relative effectiveness. Governments have a natural tendency to reach for regulatory command and control approaches. These have had mixed results, as some examples from Commission work demonstrate.

Fear of prospective restrictions can have unintended consequences

The Native Vegetation Inquiry (PC 2004) found that there had been considerable pre-emptive clearing in Queensland in anticipation of the imposition of restrictions. Total clearing rose from around 330 000 hectares a year over the 1991–1999 period to 758 000 hectares in 1999–2000, when forthcoming restrictions were signalled. Similarly, the Inquiry into heritage protection (PC 2006a) found that the regulations created a disincentive to maintain properties that could be listed.

These experiences illustrate the importance of finding ways to protect socially valued natural and built assets that align the interests of owners with those of the wider community.

Prescriptive standards or approaches can also create perverse incentives

The Native Vegetation Inquiry also found that landholders were clearing regrowth earlier than was efficient, whether from a production or a biodiversity perspective, in order to avoid the areas falling under the regulation (which applied to regrowth over 10 years old).

In a different way, the 'waste hierarchy' adopted by most jurisdictions distorts incentives. The hierarchy puts in order of preference, avoidance, reuse, recycling, recovery of energy, treatment, containment and, only when all other possibilities are exhausted, disposal. The Commission's Inquiry into Waste Management (PC 2006c) argued that this approach failed to appreciate that other inputs were also employed for each of these management options, the costs of which will be context dependent. The neglect of other environmental impacts (such as greenhouse gas from energy consumption or water quality effects) can also lead to perverse outcomes.

Taxes are sometimes levied on activities having little environmental impact

A number of governments in Australia levy taxes on waste disposal to encourage reduction in waste generation and greater recycling, as well as to raise revenue to fund provision of environmental services in other programs. The Waste Management Inquiry found that the waste levies did not reflect the environmental costs imposed by the landfill, and that they were unrelated to the level of effort at a landfill site to reduce leakage and other environmental impacts. Indeed, these taxes were more likely to be levied at large metropolitan landfills that already complied with strict standards for environmental management. The levies also increased the incentives for illegal dumping.

And even if the target is right, it may not be the most cost effective approach

Our report on Rural Water and the Environment (PC 2006b) found that the on-farm incentives offered for water efficiency improvements (to release water for environmental purposes) were, by necessity, higher cost than buying the water in the market. (Otherwise farmers would have implemented them and sold the additional water generated.) Water saving can also be illusory where unused irrigation water would have been returned to the system. The Commission's recent Urban Water study (PC 2008a) presented findings that few, if any, subsidies for

more water efficient appliances were cost effective, for example Crase and Dollery (2005) estimated that the subsidy on AAA rated dishwashers cost over $33 000 per megalitre of water saved.

But there are some success stories — that got the incentives right

The Waste Management Inquiry pointed to the effectiveness of financial assurances, such as those adopted by the Victorian Environmental Protection Authority, in providing an incentive for landfill operators to implement the most cost effective practices to deliver specified environmental outcomes.

The threat of legislation can also be very effective. For example, in our report on the Great Barrier Reef (PC 2003), it was noted that the sugar industry in New South Wales has implemented a requirement for best management practice to reduce disturbance of acid sulphate soils. It is enforced by the mills requiring evidence of compliance as a condition of accepting cane for processing. The industry is reported to have implemented the scheme to avoid a regulatory approach.

And imperfect solutions may still be better than not trying

Despite their unintended consequences, the restrictions on land clearing have greatly reduced the loss of native vegetation. While the contribution to protecting biodiversity is somewhat uncertain, this has certainly helped Australia to meet the Kyoto target for greenhouse gas emissions. This raises questions of whether the good outcomes could be obtained without the bad — and what aspects of instrument design are essential and what are not.

The first session will have contributions from John Freebairn from Melbourne University on the efficient allocation of, and investment in, the environment; Drew Collins from the BDA Group on environmental policies that are proving ineffective, due to poor design or practical difficulties; and Arlene Buchan from the Australian Conservation Foundation on market-based instruments and water recovery in the Murray Darling Basin.

1.3 'Market' and cooperative solutions and the role of government

Market-based instruments have an important place in the toolbox of environmental policy. The second session focuses on these approaches. The Commission, which views policy issues primarily within economic frameworks, has a well known

predilection for market solutions. Our work has shown, however, that there are limits to their applicability and problems from poor system design. In particular, transactions costs, including measurement and monitoring, can be substantial. Then there are issues of equity and managing the potential market power that can be created.

Restrictions on trade reduce the scope for cost effective solutions

The National Water Initiative has established a number of 'accountable environmental managers' who have the mandate to provide water for the environment. Our study on Rural Water Use and the Environment found good prospects for achieving the desired environmental flows through rural water trading. However, the report found the scope to source water was limited by a number of impediments, including restrictions on the purchase of seasonal allocations (as opposed to permanent entitlements), and caps on interregional trade, as well as budget limitations.

In this case the restrictions on trade are a response to farmers' concerns about access to water for irrigation and the risk of stranded assets. In other cases, restrictions can relate to environmental services provided by a resource that are incidental to the primary use. Examples are recreational fishing in fisheries subject to quotas, or bush harvest in areas protected for biodiversity. Such restrictions or permissions can reduce the effectiveness of the market, raising questions of when they should be allowed.

Cooperative solutions need a supporting legal framework

Private markets for environmental services can be 'created' by government establishing a legal framework to enforce contracts and resolve disputes. It may also need to develop an information base to allow monitoring of service delivery where there are significant economies of scale or public good characteristics reducing incentives for private monitoring.

The Commission's Inquiry into the Impacts of Native Vegetation and Biodiversity Regulations reported on the Trust for Nature conservation covenant program in Victoria. This covers the legal costs to landholders of entering into a legally binding covenant on areas of their land to manage and protect in perpetuity. The program also provides advice on management action and periodic visits to assess the condition of the land, and is funded by community and government contributions.

Another approach used by Trust for Nature and similar philanthropic groups is to buy properties through a revolving fund, establish a covenant, and then sell each property to someone who wants a 'private nature reserve'. Enforcement of the covenant restrictions is still essential.

The cost of such voluntary covenant and purchase-resale programs depends on the competition in the supply of properties with the desired environmental characteristics. It also depends on the value that owners place on conservation and their use needs. The effectiveness of the market also depends on the buyer's ability to estimate the environmental value of the area protected by a covenant. This can be difficult in diverse areas or where contiguous areas are required that fall outside property boundaries.

The second session deals with the role of government in creating and supporting market-based approaches to environmental issues. When will markets work and what does government need to do to develop and support market-based solutions?

Gary Libecap from the University of California will talk about promoting better environmental outcomes through property rights and markets, with a focus on opportunities and limitations. David Brunckhorst from Rural Futures at the University of New England addresses the right scale for policy development and initiatives and how to identify the confluence of community interest with environmental services at landscape scale. Suzie Kerr, from Motu Economic and Public Policy Research, will share experiences from New Zealand on consideration of environmental markets to deal with greenhouse gas emissions and nutrient loss into waterways. Dave Pannell from the University of Western Australia will discuss characteristics for policy to generate cost-effective environmental improvements.

1.4 Institutions and incentives to enable better policies

As noted earlier, institutional arrangements are crucial to the effectiveness of policy. The Commission is increasingly involved in tasks that assist the reform work of the Council of Australian Governments (COAG). COAG provides considerable opportunities for the cooperative approaches that can be so important for addressing many environmental issues. The constitution gives the states control of most of the environmental resources in Australia, but environmental planning is often delegated to the local government level. More recently, catchments have formed the basis of regions for environmental and natural resources management. The Commonwealth seeks to influence the states through various means — most notably access to programs funded by the Commonwealth — but also through various laws, and via international commitments under various environmental conventions. The

Commission has found that roles and responsibilities for environmental policy are not always as clear as might be desired. Confluence rarely occurs between the on-ground locations, areas of common community interest, legal responsibilities and capacity for funding.

There is potential for policy inconsistency across and even within jurisdictions

Mandatory Renewable Energy Targets (MRET) were initially established by state governments to raise the share of energy production from renewable sources in the absence of adequate price signals for non-renewables. The national MRET now requires energy suppliers to meet a larger target or face penalties. In doing so they can purchase from the lowest cost producers of approved sources of renewable energy. This is an improvement over the existing arrangements, which have involved differences across jurisdictions in the criteria for approval, reflecting perhaps the influences of different suppliers across the jurisdictions. However, as the Commission's recent submission to the Garnaut Review (PC 2008b) noted, under an effective emissions trading scheme an MRET would be unnecessary and, if binding, would raise the costs of energy through the exclusion of lower cost technologies.

Governments still have to set the rules of the game and are subject to lobbying

Garnaut's Draft Report and the Government Green Paper on an Emissions Trading Scheme have seen intense lobbying efforts from industry, consumer and environmental groups. From exclusions for petrol and trade exposed industries, to compensation for other labour-intensive activities, each seeks to influence policy design to their advantage. Such efforts will arise in any consultative process for policy making, and perhaps it is encouraging that so much is out in the open. Yet it does underline that policy design and governance need to be developed in recognition of the likelihood of 'gaming' and rent-seeking. This is a key practical issue, for example, bearing on the choice between 'cap and trade' and a carbon tax. (PC 2007)

The third session explores the important role of institutions in achieving good outcomes. Rob Stavins from Harvard University will provide an international perspective addressing the institutional challenges for emission trading schemes. Wendy Craik, from the Murray Darling Basin Commission, will provide a domestic focus, drawing on considerable experience with cross jurisdictional institutions.

Henry Ergas, from Concept Economics, will talk about the institutional reforms needed to generate better environmental outcomes.

1.5 Some implications for public policy

Finally, this tour of the Commission's foray into environmental policy issues would not be complete without mentioning the plastic shopping bag issue! A few pages on this issue in the waste management report caused much fuss, but ultimately demonstrated that a little analysis can go a long way. In short the Commission soon found that the evidence cited in support of banning plastic bags was not what it seemed; that in any case a ban would not address the alleged environmental problem, and that the costs of a ban would greatly exceed the benefits. Despite vigorous counter attempts by ban-supporters to 'shoot the messenger', COAG eventually chose not to implement a ban nationally.

The plastic bags story illustrates the pressures on Government to respond to the loudest voices, without taking the time to understand all the dimensions of a problem and whether, with the policy instruments at its disposal, it can make a difference for the better. This of course is not confined to environmental policy. It has to do with the policy development process generally and, in particular, the need to entrench evidence-based foundations to enable political decisions to recognise the economic tradeoffs.

The last session of the day will draw out the implications for public policy in Australia. Geoff Brennan, from the Australian National University, will start the session — as he has done so well at several other Commission events — and the three keynote speakers will then have a chance to reflect on the proceedings and draw their conclusions about what it all means for public policy.

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