OVERVIEW

Key points

- Retention, management and rehabilitation of native vegetation and biodiversity on private land are important for many reasons including resource sustainability and protection of endangered ecosystems. But existing regulatory approaches are not as effective as they could be in promoting these objectives and impose significant costs:
 - The effectiveness of restrictions on clearing of native vegetation has been compromised by: a lack of clearly-specified objectives; disincentives for landholders to retain and care for native vegetation; and the inflexible application of targets and guidelines across regions with differing characteristics such that perverse environmental outcomes often result.
 - Many landholders are being prevented from developing their properties, switching to more profitable land use, and from introducing cost-saving innovations. Arbitrary reclassification of regrowth vegetation as remnant and restrictions on clearing woodland thickening in some jurisdictions are reducing yields and areas that can be used for agricultural production.
- Some costs could be reduced and effectiveness improved if regulatory regimes followed good regulatory practices that promoted transparency and accountability. But more fundamental change is required to promote better targeting of policies to achieve clearly-specified environmental outcomes as efficiently as possible. There is also an urgent need for more equitable cost-sharing arrangements.
- The Commission proposes a process of greater devolution of responsibility to the regional level, formalised within national and State/Territory guidelines, whereby:
 - Landholders, individually and/or as a group, would bear the costs of actions that directly contribute to sustainable resource use and, hence, the long-term viability of their operations. Regional bodies would determine what actions are required.
 - The wider community would pay for the extra costs of providing 'public-good' environmental services, such as biodiversity conservation, that it apparently demands. Using regional institutions to deliver public-good objectives would promote coordination and consistency of approaches.
- Not only would this approach be more equitable but, by encouraging and rewarding the ongoing cooperation and effort of landholders, it would be more efficient and effective in achieving desired environmental outcomes:
 - Landholders would have positive incentives to retain and manage native vegetation and to deliver specified environmental outcomes in flexible, innovative and cost-effective ways.
 - Payments to landholders for public-good conservation would facilitate increased scrutiny of costs and benefits of policy intervention.

Overview

There are two main purposes in this inquiry. The first is documenting and assessing the impacts of existing native vegetation and biodiversity regulatory regimes on landholders and local communities, and the effectiveness of the regimes in reducing the costs of resource degradation. The second is to explore whether there are more efficient and effective ways of achieving desired environmental objectives.

The inquiry is *not* about arguing the case for or against promotion of environmental objectives — the desired extent, location and condition of native vegetation is for the community to determine. In other words, this report is not about the benefits and costs of retaining native vegetation as such, but rather the efficiency and effectiveness of using jurisdiction-wide regulations to do so.

The Commission has concluded that the current heavy reliance on regulating the clearance of native vegetation on private rural land, typically without compensating landholders, has imposed substantial costs on many landholders who have retained native vegetation on their properties. Nor does regulation appear to have been particularly effective in achieving environmental goals — in some situations, it seems to have been counter-productive.

In the Commission's assessment, greater exposure of the costs and benefits of additional conservation effort, clarification of environmental objectives, and a process for determining agreed landholder and community responsibilities that promotes cooperation and trust, will be critical to achieving more efficient and equitable solutions.

Native vegetation and biodiversity regulatory regimes under review

Over the past 20 years or so, State and Territory governments have introduced, and progressively strengthened, legislation controlling the clearing of native vegetation on private freehold and leasehold land (which together comprise about 60 per cent of Australia's land mass). Regulatory regimes continue to evolve. During the course of this inquiry: the New South Wales and Queensland Governments announced their intention to stop all broadscale clearing of remnant native vegetation from mid 2004 and the end of 2006 respectively; and legislation introducing an integrated permit system was passed in Western Australia in late 2003.

The main stated rationales for the introduction of clearing controls have been land degradation (particularly salinity problems in some States) and a concern in many jurisdictions that levels of remnant native vegetation — especially on private leasehold or freehold land — were approaching critical levels for habitat and biodiversity maintenance.

Impetus for regulation has also come from a commitment by all Australian governments, through the Natural Heritage Trust, to reverse the long-term decline in the quality and extent of Australia's native vegetation cover. While aggregate levels of native vegetation are substantial in many jurisdictions (figure 1 and table 1), the National Land and Water Resources Audit has expressed concern about the representativeness of ecosystems formally secured in 'protected' areas, and about land and water degradation in particular regions. International obligations have also played a part. For example, Australia is a signatory to the United Nations Convention on Biological Diversity.





Data source: NLWRA (2002a).

Table 1 Remnant native vegetation by State and Territory, 1997

	% Intensively-used zone
New South Wales	67
Victoria	37
Queensland	72
Western Australia	56
South Australia	64
Tasmania	80
ACT	69
Northern Territory	98

^a Representing about 38 per cent of Australia's total land mass, mainly covering the agricultural, pastoral and urban zones in each jurisdiction.

State and Territory legislation typically sets out (on a jurisdiction-wide basis) when permits or approvals must be obtained by landholders who intend to clear native vegetation on their properties. The application and breadth of controls varies significantly across jurisdictions. Different requirements generally apply to leaseholders and owners of freehold title.

Most regimes provide for some exemptions from the need for a permit to clear native vegetation for designated personal use and some agricultural management practices (box 1). However, many participants complained that exemptions were ill-defined and inconsistently applied.

Box 1 Regulatory regimes: selected definitions and exemptions

'Native vegetation' comprises grasses and groundcover as well as trees in New South Wales, South Australia, Victoria and Western Australia; native grassland is excluded in Queensland and (currently) in Tasmania from general permit requirements, although grasses may be protected under threatened species legislation and the Australian Government's Environment Protection and Biodiversity Conservation Act.

Clearing' typically includes felling, removing or destroying by any means (usually with the exception of grazing activity). In Victoria, permits are required for lopping branches.

Exemptions typically include: small areas (for example, less than one hectare); planted timber; infrastructure; fire-breaks, fencing; firewood for personal use; drought fodder; regrowth (for example, less than 10 years old in Victoria, less than 5 years old in South Australia). Extractive industries usually are exempt from native vegetation regulations though they are subject to industry-specific legislation.

Several jurisdictions (New South Wales, Victoria and Queensland) have established regional processes to devise regional clearing guidelines, although any regional or local guidelines and conditions must at least meet jurisdiction-wide requirements.

0/ internetively was done

Most State and Territory governments also have separate legislation protecting threatened species of flora and fauna. In addition, there are several other pieces of legislation that may regulate whether landholders can lawfully clear native vegetation on their properties, regardless of whether exemptions apply under native vegetation management legislation.

At a national level, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides a framework for Australian Government involvement in matters of 'national environmental significance' including, of particular relevance to primary producers, nationally threatened species, wetlands and ecological communities.

How well have current regimes promoted environmental goals?

Where stated, environmental objectives of the various Acts that regulate native vegetation and biodiversity throughout the jurisdictions are diverse, but generally include protection of native vegetation, ecosystems and species and sustainable development. However, typically little guidance is provided about how to implement and monitor achievement of these higher-level objectives.

To the extent that effectiveness is monitored, it tends to be measured by changes in the estimated level of clearing of native vegetation — a somewhat more tractable but partial and imperfect proxy measure of environmental outcomes.

According to available data, clearing of native vegetation seems to have declined in most jurisdictions since the introduction of the regimes (table 2). However, there is also evidence of non-compliance and pre-emptive clearing undertaken as insurance against possible future policy changes. Reclassification of 'regrowth' as 'remnant' native vegetation after a certain period, for example, often encourages early clearing to avoid possible future restrictions.

	Period	Hectares per year	Comment
New South Wales	1980–1990	100 000	Clearing of native woody vegetation
	1991–1995	50 000	Clearing controls introduced 1995 and
	1995–1997	30 000	strengthened 1997
	1997–2000	14 000	
Victoria	1983–1988	10 438	Clearing of native woody vegetation
	1989–2001	2 500	Clearing controls introduced 1989
Queensland	1980–1990	297 560	Clearing of native woody vegetation Clearing controls for freehold land announced 1999, introduced 2000
	1991–1999	330 555	
	1999-2000	758 000	
	2000-2001	378 000	
Western Australia 198 199	1983–1993	26 028	Based on permit applications
	1994–2001	3 500	(includes non-woody native vegetation)
South Australia 1983–1993 1996–2002	1983–1993	11 630	Based on permit applications
	2 060	(includes non-woody native vegetation)	
Tasmania	1983–1993	6 000	6 000 Clearing of native forest vegetation for 1 500 agricultural purposes
	2000–2002	1 500	
Northern Territory 1983–199 1995–199	1983–1993	16 280	Figures for 1994 onwards relate to
	1995–1999	1 140	leasehold land only
ACT		_	Removal of stands of trees for urban development

 Table 2
 Indicative annual rates of native vegetation clearing

The focus of the regimes on preventing clearing of native vegetation often seems several steps removed from achieving desired environmental outcomes. While there are some significant differences in the application of controls across jurisdictions, common themes to emerge include that:

- broad rules relating to clearing of native vegetation and targets for retention of native vegetation applied across whole jurisdictions have not been sufficiently flexible to take account of regional variations. Their application frequently has led to perverse environmental effects. For example: premature clearing of regrowth and more intensive rotation of paddocks contributes to soil degradation. Restrictions on thinning or clearing of woodland 'thickening' have indirectly promoted soil erosion and biodiversity loss in some cases;
- an emphasis on prevention of native vegetation removal, rather than a focus on the promotion of desirable environmental *outcomes*, also can lead to perverse effects. For example, innovations in farming practices (such as the introduction of water-saving centre-pivot irrigation systems) that in addition to improving farm productivity, may improve environmental sustainability, can be prevented if paddock trees cannot be removed or if planting offsets imposed as a condition of their removal are prohibitively costly. Clearing restrictions can also prevent effective removal of weeds and pests;

- incentives for landholders to care for, conserve or re-establish native vegetation voluntarily have been diminished because they fear that harvesting or use of native vegetation may be prohibited in future. Moreover, if landholders were to allow or encourage native vegetation to establish, they risk forfeiting the option to use that land for future production, thus restricting their ability to respond to changing circumstances. From the landholders' perspective, native vegetation loses its private value and becomes a liability; and
- avoidance and evasion of regulations have prompted the progressive introduction of stronger regulations and stricter enforcement and penalty provisions, creating an adversarial climate and further eroding landholder goodwill.

Operation of the regimes

Many participants expressed concerns about procedural complexity and a lack of transparency and accountability. In those instances where independent audits of State and Territory regimes have been undertaken, such concerns seem to have been confirmed. Some regimes have met more of the attributes of good regulatory practice than others — for example, the Australian Government's EPBC Act and arrangements in Tasmania and the Northern Territory. However, no State or Territory regime as far as the Commission has been able to ascertain, meets all criteria for good regulation. In particular:

- legislation often has been introduced with little or no consultation (sometimes deliberately so, to avoid pre-emptive clearing) and without assessment of likely costs and benefits;
- decision rules often seem to be based on the mapping of remnant native vegetation, the accuracy of which is frequently disputed by landholders and other parties, and on an incomplete understanding of the dynamics of local ecosystems;
- the compliance burden placed on landholders often seems excessive. Landholders may have to seek information and permits from several government departments and authorities. Advice is not always consistent and receipt of a permit from one agency does not necessarily satisfy requirements of other agencies;
- application costs can be high because landholders frequently have to provide detailed surveys and other information as part of their applications. Delays in processing applications also add to costs;

- a lack of clear environmental objectives in many jurisdictions means that reasons for decisions on permit applications, if given at all, are not transparent and often appear to be inconsistent, thus making local application of regulations difficult in some situations;
- regional processes that were intended to build on local knowledge and adapt assessment criteria to fit local needs and characteristics seem not to have worked well, either because representation has not been 'local' and/or because local decisions have been circumscribed or overturned by governments; and
- appeals and dispute-resolution mechanisms have not been available in some jurisdictions and have been limited and costly in others.

Recent legislative amendments in some jurisdictions address some of these issues, including, for example, the provision of an appeals mechanism and introduction of an integrated permit system in Western Australia, and provision in New South Wales for more flexibility at the regional level.

Impacts on landholders

A major part of the terms of reference is to assess positive and negative impacts of existing native vegetation and biodiversity regulations on landholders. This focus on the impacts of regulatory regimes on landholders elicited criticism from a number of participants. The Commission appreciates that considering only the costs imposed on landholders by regulatory regimes would not provide a sound basis for decision-making. However, although environmental benefits accruing to the community at large from retention of native vegetation are not being assessed, this does not imply that the community-wide benefits from appropriate native vegetation management and biodiversity conservation are insignificant.

The Commission received evidence from around 180 landholders and their representatives, and other participants such a local governments, about the negative impacts of native vegetation and biodiversity legislation. Little evidence was received from landholders about positive impacts of the regulations, although many acknowledged the benefits of sustainable, resource-management practices.

This is not a random sample of Australian landholders — those who have few or no complaints are less likely to participate in this inquiry. (Indeed, a fundamental problem with clearing regulations is that they have little effect on landholders who have little native vegetation remaining on their properties — those who by choice or chance have substantial native vegetation on their properties stand to lose the most.) Nonetheless, qualitative evidence of impacts provided by participants, coupled with

the Commission's own observations on numerous field trips and wider research, was consistent and generally compelling.

Negative impacts of regulation

Clearing controls have four broad types of impact on farming practices:

- preventing expansion of agricultural activities;
- preventing changes in land use (for example, from grazing to cropping) and adoption of new technologies (such as installation of centre-pivot irrigation);
- inhibiting routine management of vegetation regrowth and clearing of woodland thickening to maintain areas in production; and
- inhibiting management of weeds and vermin.

The scale and nature of such impacts vary across jurisdictions, reflecting the level of demand for vegetation clearance, coupled with the severity of restrictions. For example, the aggregate impact of clearing restrictions may be higher in New South Wales and Queensland, where there is a demand for broadscale clearing and where such clearing has been or is about to be stopped. Impacts in the Northern Territory and Tasmania, although not zero, appear to be less significant because the demand for clearing for agricultural purposes is lower and native vegetation controls so far have sought to balance economic and environmental objectives. (That said, concerns were raised about the potential impact of inflexible native vegetation and biodiversity regulations on the sustainable development and management of large tracts of land belonging to Aboriginal communities in the Northern Territory.)

Somewhat surprisingly, the impact of native vegetation restrictions is not confined to the 'frontier' or areas where broadscale clearing is occurring. Many landholders in Victoria and New South Wales commented on the detrimental impact of regulation that reclassifies regrowth, including grasses, more than 10 years old, as remnant. For cropping and mixed farm enterprises, where long-term rotations are an integral part of the production cycle, such arbitrary rules could excise previously cropped or grazed areas of land from production in future. Perversely, remaining cleared land could be degraded by over-intensive farming in an effort by landholders to offset such losses simply to maintain farm viability in the short term.

There is also evidence that innovation (including the introduction of centre-pivot irrigation systems and self-drive tractors using GPS technology) as well as routine farming practices (such as paddock rotations and fencing) are being frustrated, sometimes stopped, because of restrictions on clearing or even lopping branches from paddock trees. Failure to access cost-saving technology could eventually lead

to some otherwise viable farms becoming unviable, particularly if the terms of trade for agriculture continue to decline.

The impacts of restrictions are likely to increase over time because:

- regrowth and woodland thickening, innovation and farm management are ongoing processes, not once-off events; and
- controls are continually being strengthened.

The Commission has not attempted to quantify jurisdiction-wide effects of the legislative regimes. Instead, in order to investigate the drivers of the impacts of native vegetation clearing restrictions at a regional level, two shires were examined — Moree in New South Wales and Murweh in Queensland. Any estimates of the impacts of land-clearing restrictions are highly sensitive to data and assumptions about future prices, productivity growth, annual rates of clearing, the discount rate and the policy scenario. Therefore, the results should be interpreted as providing an indication of orders of magnitude, not precise measures of likely impacts.

Commission estimates suggest that the economic impacts of broadscale clearing restrictions that prevent the conversion of land from native vegetation to crops in the Moree Plains Shire, or the clearing of woodland to maintain or improve grazing capacity in Murweh Shire, could be significant (box 2). The well-documented phenomenon of woodland thickening on large tracts of grazing land in Queensland could progressively crowd out grazing activity if cost-effective counter-measures were not permitted.

Any reduction in expected net farm returns will roughly translate into a commensurate decline in current property values. Evidence was received from a number of participants about the increasing gap between the values of uncleared and cleared land, where the gap cannot be explained by the costs of clearing and differences in land quality.

Furthermore, a reduction in anticipated returns — or simply an increase in the risk premium because of the uncertainty surrounding the impact of native vegetation regulations — will also affect farm investment and the willingness of finance providers to lend. Finance providers have not participated in the inquiry, although a number of landholders provided evidence (some on a confidential basis) that lending institutions had reduced the valuation of their properties as a direct result of the impact of, or simply the uncertainty created by, native vegetation regulation. This had reduced their assessed equity in the property and, hence, worsened their risk status.

Box 2 Estimates of potential impacts of broadscale clearing restrictions in Moree Plains and Murweh Shires

The Commission's approach has been to estimate landholders' returns if they were not constrained by clearing restrictions, in order to isolate the effects of clearing restrictions. It is assumed that landholders would voluntarily retain some native vegetation because of shade, shelter, erosion prevention and other private benefits it can deliver.

Using this methodology and a range of data and predictions about prices, costs, productivity growth and annual clearing rates, estimates suggest that prohibitions on broadscale clearing could reduce the present value of expected *net* returns (2003 dollars) to land, capital and management (over a 40-year period) in Moree Plains Shire (NSW) by \$27–\$84 million, depending on the productivity of newly-cleared land, and by \$42–\$124 million in Murweh Shire (Queensland), depending on the outlook for future cattle prices and whether woodland thickening can be countered effectively.

Results from the case studies should not be applied to other regions in the two States concerned, or indeed, to other States and Territories. Nor should they be used to indicate unavoidable losses incurred by particular landholders that might warrant compensation. For example, the estimates include some returns to factors of production that are likely to be mobile in the longer term, such as management and capital. Adjustment by these factors would tend to reduce estimated long-term losses. In addition, as a large proportion of land in Murweh Shire is leasehold, the share of losses borne by leaseholders will depend on what they pay (or have paid) for the lease. On the other hand, the estimates do not capture adjustment costs that may be incurred by landholders and others if alternative employment is not readily available.

Government measures mitigating negative impacts

Compensation for the impacts of native vegetation regulations has been and remains the exception rather than the rule. In South Australia, between 1985 and 1991, compensation was offered to landholders whose clearing applications were rejected and who agreed to set aside the land under a heritage agreement. A similar, if somewhat more limited, scheme has operated in Western Australia.

Assistance packages have been announced for landholders in Queensland and New South Wales affected by proposed broadscale clearing bans in those two States, although it is not clear that compensation will be paid for losses incurred.

Several jurisdictions provide for compensation for the effects of threatened species legislation. Victoria's threatened species legislation (*Flora and Fauna Guarantee Act 1988*) provides for compensation of landholders, but the legislation is seldom applied to the extent that compensation provisions are invoked — instead, planning regulations are used to protect habitat at landholders' expense.

Provisions exist in most jurisdictions for landholders to receive some financial assistance (often through Natural Heritage Trust funding) for the costs of fencing-off native vegetation; they may also receive local rate rebates on set aside land. Some States also have programs where environmental services or land covenants are purchased from landholders (the pilot BushTender scheme in Victoria and the more comprehensive Private Forest Reserve Program in Tasmania).

Positive impacts for landholders from regulation

Landholders individually or as a group may benefit from a range of services provided by native vegetation such as fodder for stock, timber for fencing, reduced soil erosion and prevention of soil and water degradation. However, that there are some benefits accruing to landholders does not mean that they necessarily will benefit from *all* of the native vegetation required to be retained by current regulations, or that the benefits to them will outweigh the costs.

Where there are private net benefits from retaining native vegetation, individual landholders would be expected to retain native vegetation voluntarily. It is possible that the regulations have alerted some landholders to sustainable and profitable land-management techniques. However, the weight of evidence in this inquiry suggests that landholders are more likely to consider the regulations and their implementation to be ill-conceived and often contrary to the long-term sustainable management of their properties. Even if there were an educational by-product effect of the regulations, a targeted education program is likely to be a more efficient instrument.

Native vegetation and biodiversity regulations generally seek to retain native vegetation to promote wider community objectives, including biodiversity, in addition to addressing resource degradation issues. As discussed below, local communities and landholders acting together are likely to be well placed to address resource degradation issues in ways that take account of local conditions and knowledge. This may not require retention of native vegetation at levels currently imposed by jurisdiction-wide legislation. For example, some services provided by native vegetation (such as the prevention of soil erosion and salinity) could be provided in other ways, including by non-native vegetation.

Impacts of regulations on regions and other industries

To the extent that production and incomes of local landholders are lower than otherwise as a result of the regulatory regimes, there may be a flow-on effect to local towns and communities. As in the case of impacts on landholders, impacts of regulatory regimes on local communities will vary widely.

Potential positive impacts on regions from retention of native vegetation under the regulations include lower infrastructure maintenance costs from lower salinity levels, and increased eco-tourism. To the extent that there are higher-valued uses of land, it might be expected that normal market mechanisms would encourage this shift. Some landholders indicated that the only prospective buyers of their land, which can no longer be cleared because of the regulations, were city dwellers who visited for occasional 'weekend hunting' and who would contribute little to the local community.

The inquiry received little evidence from the mining and infrastructure industries about the impacts of native vegetation regulations. In several jurisdictions, extractive industries are exempt from general native vegetation controls and are subject to industry-specific legislation. Large mining projects may not have been stopped by native vegetation controls, though their costs may have been increased because of revegetation and planting offset requirements in some jurisdictions. There is some evidence that smaller ventures may have been deterred because of these additional costs.

The apparent lack of interest in the inquiry from infrastructure providers may or may not imply that impacts are low. It is possible that regulated infrastructure providers are able to set prices to reflect higher operating costs, or that publiclyowned providers such as roads departments, constrained by budget allocations, simply provide services up to the budget ceiling. Local government participants from Victoria claimed that the need to obtain permission to clear trees close to roads stretched council budgets and delayed roadworks, sometimes with adverse implications for driver safety. In both cases, consumers or the community, and not the providers, will bear these largely hidden costs.

Ways of reducing adverse impacts

The Commission has not been asked to consider whether the benefits of existing regulatory approaches outweigh their costs. It is possible that the community benefits of current regulatory arrangements outweigh the costs imposed on private landholders and others. However, given that environmental outcomes resulting from the regimes generally are not assessed, and given the lack of transparency about their costs, in the Commission's view, no-one could make a well-informed assessment one way or the other. Indeed, this lack of information about relative costs and benefits is a fundamental problem with the current regimes.

Nonetheless, based on the evidence presented to the Commission, and its own observations and analysis of the incentive structure provided by current regulation, the Commission considers that better environmental outcomes could be achieved at less cost to the community overall and landholders in particular. The Commission proposes a three-part approach to reforming existing arrangements:

- improve existing regulatory regimes;
- remove impediments to and promote private conservation; and
- develop a formal process for sharing costs and devolving responsibilities.

1 Improve existing regulatory regimes

Wider application of 'best-practice' principles of regulation would introduce greater transparency and accountability and reduce procedural complexity (box 3).

As noted above, legislation in some jurisdictions meets more of the criteria for 'good regulation' than in others — for example, the EPBC Act sets out time limits for consideration of applications and requires economic and social factors to be taken into account in the approvals process. In some jurisdictions, procedural improvements have been foreshadowed or recently implemented.

Box 3 Towards regulatory 'best practice'

- Objectives of legislation should be clearly specified in terms of desired environmental outcomes, so that regulations and decisions link back to these objectives and performance of the regimes can be monitored and assessed.
- Duplication and inconsistencies should be minimised by amalgamating/simplifying regulations and permit requirements.
- Landholders should be assisted to meet their responsibilities through adequate information about those responsibilities, and education about sustainable land practices and environmental problems.
- Statutory time-frames for assessing permit applications should be applied.
- Economic and social factors should be taken into account where applications to clear otherwise would be rejected on environmental grounds, and reasons for decisions should be made publicly available.
- Accessible, impartial appeals and dispute-resolution mechanisms should be available.
- Regular audits and independent reviews of the overall effectiveness and costs and benefits of regimes should be undertaken and the results published.

The Commission also proposes a larger role for regional decision making within existing regimes, to make use of the extensive knowledge of landholders and local communities and to allow regional variations in requirements. This would require giving more autonomy (and support) to existing regional committees to develop and perhaps implement appropriate requirements. Importantly, a greater regional focus would allow relaxation of some seemingly arbitrary, across-the-board requirements (such as those applying to native vegetation regrowth in many jurisdictions) and native vegetation targets, which seem to impinge significantly on routine agricultural practice and impose substantial costs on landholders, often for little apparent environmental benefit. The NSW Government has indicated some changes to its regime along these lines.

There is also a need to upgrade the quality of data on which decisions are based (for example, ground surveys to verify satellite mapping) and to provide mechanisms for data revision and updating.

Such changes would significantly reduce compliance costs of existing regulation incurred by landholders and the community overall, while not detracting from, and most probably enhancing, environmental outcomes.

However, landholders would still bear the costs of supplying many communitywide benefits (potentially encouraging the community, which is oblivious of the costs, to seek more), and prescriptive regulation of clearing of native vegetation would remain the principal instrument for bringing about desired environmental services. In the Commission's view, more fundamental reform is warranted for several reasons:

- regulation of native vegetation clearing is inflexible, prescriptive and 'input' rather than 'outcome' focussed;
- regulation of clearing is a partial measure it does nothing to ensure ongoing management of native vegetation or its regeneration. Indeed, landholders are faced with disincentives to care for and regenerate native vegetation; and
- jurisdictional regulation by design or accident has muddled the issue of landholder and community responsibility.

Regulation may be an efficient instrument in some circumstances, but current regulations have been imposed with insufficient consideration of the nature of the problem to be addressed and the costs and benefits of current regulation relative to other approaches, including less prescriptive regulation.

2 Promote private conservation

There is ample evidence that many landholders increasingly are implementing more sustainable agricultural practices (box 4), not only because these practices improve the productivity of the land, but also because landholders derive other private benefits such as visual and recreational amenity. In some cases, they simply may wish to be 'good citizens'.

Box 4 Examples of sustainable agricultural practices

According to Munmurra Landholder Action Group (New South Wales):

Examples of these improvements would be: minimum till cultivation; cell grazing; more effective vermin control (rabbits, feral dogs and pigs); development of bio-diverse farming systems; the growth in farmer participation in catchment management; land care groups and the general increase in awareness of the economic benefits of on farm tree planting. (sub. 69, p. 2)

John McKindlay (New South Wales) described his farming practices:

We have fenced off 70% of the river bank from stock and much of it has been planted with a native cane grass to reduce erosion. Over the years we have established 5.5 kms of trees and understorey and 12 kms of saltbush. The implementation of a full recycle system for our farm has reduced any run off from irrigation and we have established 80 hectares of deep rooted lucerne to limit accessions to the water table. We believe we are environmentally conscious and we actively promote the landcare ethic. As well as our normal farm operation we run a native plants nursery supplying farms, Landcare groups and Government Departments. (sub. 114, p. 1)

Murray Davis, a farmer in western Victoria, noted:

We understand that there needs to be a balance between production and environmental sustainability, so over the last ten years all the waterways on my property have been fenced off, native trees have been planted and areas have been fenced off for revegetation. All stock have been excluded from all waterways due to the fencing along the creeks. This consists of approximately 40 hectares plus other areas retained for shelter belts and has resulted in lost productivity to this farm. (sub. 103, p. 1)

There are many market and non-market private mechanisms that by increasing potential returns, could encourage individual landholders to provide more environmental services. These include:

- some consumers demanding environmentally-sustainable products (for example, 'green labelling'), eco-tourism, or 'green' investments;
- individuals, corporations, or organisations (such as the Australian Bush Heritage Fund, the Australian Wildlife Conservancy and the Trust for Nature) with an interest in the environment either buying land or contracting with landholders to

deliver environmental services through retention and improved management of native vegetation and biodiversity or through restoration activities; and

• groups of local farmers engaging voluntarily in cooperative efforts to address local environmental problems (for example, Landcare), possibly assisted by organisations such as Greening Australia.

A major advantage of private or voluntary mechanisms is that the outcome generally will enhance community welfare because the transaction or activity will occur only if the benefits to those paying exceed the costs. In addition, suppliers of the environmental services, landholders, will seek out efficient and innovative ways of delivering services in order to maximise profits or, in the case of community actions, net community gains.

If conservation of native vegetation can be made compatible with increasing landholder benefits, then more conservation will occur voluntarily. However, private provision of conservation services may be constrained for many reasons (box 5).

Box 5 **Constraints on private provision of native vegetation and biodiversity**

There are numerous reasons why individuals may not provide the optimal level of native vegetation and biodiversity as desired by society as a whole:

- lack of access to information about sustainable agricultural practices and their benefits and difficulties in signalling sustainable practices to consumers or investors;
- short-term financial constraints arising from unviable farm size or external 'shocks' such as drought and price fluctuations;
- restrictions on, or impediments to, private conservation projects or the commercial development and sustainable use of native vegetation;
- lease conditions preventing alternative land use that may be more 'environmentallyfriendly' than stipulated uses;
- agricultural assistance (for example, exceptional circumstances assistance including drought relief) or input price distortions that may encourage higher stocking rates, or the development of, or increased production in, economically-marginal areas;
- native vegetation regulations themselves, if uncompensated, which discount the private value of native vegetation;
- free-rider issues that weaken community efforts to solve local problems such as salinity and poor soil and water quality; and
- the public-good nature of some environmental services (such as biodiversity or carbon sequestration) which inhibits (though does not rule out) private solutions.

The variety of causes of under-provision of environmental services on private land suggests that different responses targeted at particular constraints are likely to be more effective and efficient than across-the-board regulation.

In many cases, the most effective role for government simply may be to remove regulatory or other policy distortions (for example, to promote efficient farm rationalisation). In other cases, government could take a more active role facilitating increased private effort by, for example, further promoting dissemination of information and research into the production benefits of retaining native vegetation, or its potential for sustainable commercial uses.

Environmental externalities and public goods

Where private under-provision of conservation occurs because benefits accrue 'offsite', governments potentially have a more direct role to play.

Nonetheless, where negative 'spill-over' effects and their solutions are contained within reasonably well-defined areas, cooperative voluntary solutions may still be feasible. Possible explanations for voluntary community action include the desire by individuals to be, or to be seen as, good citizens by their peers, as well as the scope for benefits (for example, improved regional water and soil quality) accruing to individual property holders. In other words, the potential individual pay-off from group effort may exceed the pay-off from individual action or, indeed, non-action.

The substantial involvement of landholders in the Landcare movement is an example. Individuals and groups may also negotiate solutions to localised 'spillovers', for example, where one group pays another to modify its practices. As discussed below, government may have a role in facilitating community solutions to community problems, for example, by providing resources and information and, in some cases, by facilitating or enforcing appropriate practices where free-riding or high transactions costs would otherwise undermine achievement of objectives.

However, where the benefits of native vegetation conservation accrue more widely and cannot be charged for, landholders are unlikely to provide the optimal level of native vegetation from a whole-of-community perspective. At some point, the provision of native vegetation and the production of commodities for profit cease being complementary and begin to compete. Beyond this point, native vegetation conserved for biodiversity purposes means that landholders lose income because the land could be put to more profitable uses from a private perspective. Two issues then arise: which policy instruments are likely to be efficient and effective in promoting optimal levels of environmental services, and who should pay for what.

3 Clarify landholder and community responsibilities

On the whole, the notion that landholders and the community should share responsibility to protect the environment seems well accepted, with the wider community paying for environmental public goods (box 6).

Box 6 Participants' views on cost-sharing

The costs of retaining native vegetation [should] be shared amongst the beneficiaries in proportion to the level of the benefit that they receive (eg landholder, local community and/or wider community) and that these proportions [should] be determined through the application of an agreed cost sharing formula. (SA Government, DR324, p. 41)

[The] Public good must be supported by appropriate support from the public purse. (ACT Sustainable Rural Lands Group, sub. 125, p. 1)

As a taxpayer I would expect and no doubt do, pay for *public good* actions wherever they happen, in areas other than the environment but do not see that we [landholders] should bear almost all the cost of this [environmental] *public good*. (T.J. Price (Western Australia), sub. 38, p. 2)

The entire community should help bear the cost of public good activities. (Greening Australia (Tasmania), sub. 134, p. 2)

There is also a greater requirement to identify the 'public versus private good' of protection of native vegetation and the biodiversity it supports. Landholders do have a duty of care to maintain and protect their natural resources. To go beyond this requires significant resources — capital, knowledge and financial. If the broader community is after benefits that go beyond this 'duty of care', then the broader community needs to actively contribute. (Murray Irrigation Ltd (New South Wales), sub. 79, p. 2)

Best Practice ... should reflect the wider community's aspirations for natural resource management outcomes. Ensuring landholders contribute appropriately to achieving such outcomes, however, should be a matter for 'incentivation' not regulation ... (Tasmanian Conservation Trust, sub. 84, p. 5)

The problem is that in practice, the distinction between private and public benefits is muddied. Some actions will produce private, regional and community-wide benefits. For example, salinity reduction or prevention may improve agricultural yields on individual properties and across regions, and also improve habitat and biodiversity.

The difficulties of isolating the private, regional and public components of benefits under current regulatory arrangements have contributed to disagreement about the extent of the burden that individual landholders or landholders as a group should be expected to bear. Establishing a more formal process for identifying and agreeing on these different components and, hence, the extent of landholders' responsibilities, will be critical to achieving a long-term solution to environmental problems.

Landholders' responsibilities

In the Commission's assessment, it is reasonable to expect landholders in the aggregate to bear the costs of actions that directly contribute to sustainable resource use and, hence, the long-term viability of their operations.

Thus, actions and mechanisms to 'internalise' efficiently what could be broadly described as externalities occurring within and between regions — landholder actions affecting soil and water quality, for example — would constitute the responsibility of landholders individually and/or as a group. This approach does not mean that individual landholders should only be expected to undertake what is in their private interests — it implies a broader responsibility to their neighbours and communities and, indeed, where actions have broader impacts, surrounding communities.

Society's responsibilities

In the Commission's assessment, the wider public should bear the costs of actions to promote public-good environmental services — such as biodiversity, threatened species preservation and greenhouse gas abatement — that it apparently demands, and which are likely to impinge significantly on the capacity of landholders to utilise their land for production.

This assessment is not simply based on some notion of fairness (although perceived fairness is not irrelevant when landholders are being relied upon to provide the environmental services demanded by the wider community). It is based on the reality that achieving the environmental outcomes that society desires on private land as efficiently and effectively as possible will require:

- clear specification of the environmental outcomes demanded; and
- the ongoing cooperation, knowledge and effort of landholders who ultimately must deliver those outcomes on their land.

Over and above agreed landholder responsibilities, the Commission therefore considers that public-good conservation (including biodiversity, threatened species

and greenhouse objectives), should be purchased from individual, or groups of, landholders.

Several participants put the view that landholders should not be 'rewarded' for *not* clearing native vegetation. But 'impacter pays' is not inherently more efficient or equitable than affected parties buying the services they value. A major problem in making landholders bear all the costs of not clearing native vegetation on their properties is that this necessitates compulsion via regulation. Yet prescriptive regulation is unlikely to promote the focus on environmental outcomes and the landholder cooperation required to achieve those outcomes. Nor is making a subset of landholders bear the costs of providing services that benefit the rest of society particularly fair, especially as many other landholders, including governments, have been responsible for large-scale clearing in the past.

Having governments buy the environmental services that the community demands (including, in some cases, buying up parts of, or entire, properties) would mimic private, voluntary transactions driven by the prospect of gains from trade accruing to both parties. This has several advantages over prescriptive regulation for promoting public-good conservation on private land:

- a process of buying environmental services will require more precise specification of the environmental outcomes demanded;
- the approach can be flexible, taking account of local variations, utilising local knowledge and encouraging innovative and cost-effective solutions that are consistent with actions to promote regional environmental objectives. Therefore, a given level of environmental services is more likely to be provided at minimum cost;
- a requirement to pay will place some discipline on the community's 'demand' for environmental services and compel prioritisation of environmental demands. It is more likely (though certainly not guaranteed) that the community's willingness to pay would be tested and the cost-benefit trade-off revealed in the aggregate and for individual projects. With uncompensated regulation, retention of native vegetation on private land essentially is a 'free good' for everyone except adversely affected landholders; and
- contract terms and conditions can be designed to provide certainty to landholders and provide positive incentives for them to retain and manage native vegetation appropriately in the long term. For the landholder, native vegetation would become an asset rather than a liability.

Such an approach has been trialled in Victoria and used extensively in Tasmania and overseas with promising results. It is not costless or without potential problems.

Criteria have to be developed for prioritising environmental objectives and for assessing environmental outcomes. Methods of eliciting 'competitive' contract prices (such as auctions) for desired environmental outcomes need to be developed. Contracts need to be designed, monitored and enforced. Because it requires case-by-case assessment, the approach can be resource-intensive. But prioritisation and clear specification of environmental objectives, the discovery of least-cost solutions and monitoring of outcomes so that performance of the intervention can be assessed and improved over time, *should* be undertaken for *any* policy intervention, including regulation.

In some cases, it is feasible that regulation to promote some public-good objectives may be efficient — for example, where a simple rule is more efficient than negotiations or auctions at property or regional levels. Importantly, however, if regulation involves the imposition of significant losses on some landholders, payment of compensation would promote acceptance of, and compliance with, the rule. The efficiency of regulation as a policy instrument does not rest on the uncompensated transfer of long-accepted — and bought — rights.

The cost-sharing approach outlined would shift some, but not all, costs currently incurred by landholders to taxpayers. Although some may regard the potential budgetary impact as a major disadvantage, possibly limiting the provision of conservation effort, the appropriate objective of policy should be maximising net community benefits, not minimising budgetary outlays.

Devolving responsibility to regional communities

If landholders and local communities are expected to address, and largely pay for, some environmental problems (such as local salinity and soil and water quality problems) themselves, there is a strong case for allowing them greater flexibility and authority to devise and implement efficient ways of doing so — and not simply imposing solutions from above, ostensibly for landholders' benefit.

Importantly, solutions to regional environmental issues may or may not involve retention of native vegetation, at least not to the level demanded by the public at large. For example, in Western Australia the principal stated reason for imposing clearing restrictions has been the need to control salinity. While salinity undoubtedly is a major problem in that State, some have suggested other approaches such as deep-rooted, perennial commercial crops. It is not within the Commission's expertise to say what the precise solutions will be, but the current regulatory approach inhibits exploration of, and experimentation with, potentially lower-cost options. Of course, to the extent that native vegetation is retained in order to solve regional environmental problems, the rest of the community can 'free-ride' on any biodiversity or other services delivered.

In the Commission's view, the most important design features are that institutions provide for genuine regional consultation and decision making and that they are delegated sufficient flexibility, authority and resources to implement their decisions. Representation should reflect the regional population and a range of viewpoints and interests, with the scope for input and guidance from government departments. That said, regional institutions will need to be accountable for delivering agreed outcomes.

There are few precedents for how responsibility might be devolved under regional approaches and, hence, there may need to be a process of experimentation and adaptation, building on many promising examples of landholders coming together to identify and solve environmental problem in their regions. Building trust and a sense of 'ownership' will be critical for success.

Policy mechanisms that regional bodies could employ to achieve regional objectives include commercial or market-based instruments, voluntary efforts, codes of practice, education or even regulations stipulating certain practices. (Where the environmental benefits to landholders are direct and clear, regulations and rules may be appropriate and more likely to be accepted and complied with.) Redistributive mechanisms may be appropriate in some instances to share costs among landholders. In Western Australia, for example, currently only those landholders with remnant native vegetation on their properties bear the costs of clearing regulations which, among other things, are aimed at controlling salinity, caused largely by past clearing on other properties.

Public-good environmental objectives formulated by the Australian, State and Territory governments ideally should be fed through regional institutions to promote coordination and consistency of approaches and, ultimately, development of least-cost 'joint' solutions. Thus there would be a 'nested' hierarchy of planning and outcome-focussed objectives, with regional bodies largely responsible for devising ways of delivering those objectives in an efficient manner (for illustrative purposes, one possible structure is outlined in figure 2).

Some participants considered that the Council of Australian Governments and National Competition Policy provided an appropriate institutional model. The Commission sees some value in developing an agreed set of broad principles to guide development of consistent approaches to, and to monitor and review, native vegetation and biodiversity management at the national, state and regional levels.



Figure 2 An illustrative nested hierarchy

Concluding remarks

Over the past twenty years or so legislation to prevent clearing of native vegetation on private land has been relied upon heavily to achieve biodiversity and other environmental objectives. The current evaluation suggests that this approach has serious design and implementation deficiencies, in many cases leading to inefficient, ineffective and inequitable outcomes.

The Commission considers that progressive implementation of the reforms outlined, by building on private effort and landholder knowledge and goodwill, could reduce the need for government intervention over time, would better clarify landholder and community responsibilities, provide better incentives for landholders to retain and manage native vegetation, and introduce greater policy variety, flexibility, accountability and transparency.

A crucial thrust of the Commission's recommendations is that policies that fail to engage the cooperation of landholders will themselves ultimately fail. In addition, greater transparency about the cost–benefit trade-offs involved in providing desired environmental services would facilitate better policy choices.