

## **Introduction:**

ACF welcomes this important inquiry as a timely opportunity to review the extraordinary variety and complexity of issues which relate to our capacity to manage our use of land for agriculture in an ecologically sustainable way.

ACF has been closely involved with a wide variety of issues relating to sustainable agriculture over many years. Rangelands management, river & water resource management, irrigation and dryland salinity, irrigated agriculture, wildlife management, integrated catchment management, landcare and vegetation management – these are all issues which ACF is well acquainted with.

As such a number of Appendices (reports, submissions, papers and general publications) covering a range of subject matter have been attached to this submission. While it may have been ideal to review, update and rationalise all of this attached material for this Inquiry, time and resource constraints make this task impossible. (Note that a good deal of relevant, but out-of-date, material has been excluded from the Appendices). A detailed response to the Commission's Draft Report will be made at a future date on all issues of concern to ACF.

This submission comprises a brief discussion of a wide range of issues, covering

1. the policy context
2. the existence of market failures and market distortions in agricultural land use, the form which these take (ie. agricultural practice, policy, funding programs) and their environmental impacts
3. A critique of progress to date in developing a strategic framework for achieving ecological sustainability, including
  - setting meaningful – and measurable – goals, objectives and targets
  - developing performance indicators and measuring performance and trends in agriculture, natural resource management and the environment
  - developing transparency, accountability and co-ordination in government programs, cost sharing principles, and expenditure priorities
  - policy instruments (legislation, community participation, property rights, taxation and land-use planning)

One could spend a year or two writing a book on these issues and still not do them justice. Unfortunately ACF's time and resources to contribute to this Inquiry are seriously limited, and this submission is necessarily brief and incomplete.

ACF hopes to contribute much more to this process in coming months.

## **1. The Policy Context**

The principles of Ecologically Sustainable Development (ESD) are open to considerable interpretation. Nevertheless, there is now broad consensus about the four fundamental principles of ESD as follows:

- the improvement of individual and community well-being and welfare by following a path of economic progress that does not impair the welfare of future generations
- the provision of equity within and between generations
- protection of biological diversity and the maintenance of ecological processes and systems
- recognition of the global dimension

These fundamental principles incorporate a range of more specific principles including:

- the maintenance of constant natural capital (ie. capital such as water which cannot be replaced by human-made capital)
- establishing bio-physical limits to the use of land and other natural resources (such as water)
- appropriate pricing of natural resources, and the use of pricing and/or other mechanisms to take account of environmental values
- efficiency of resource use
- the maintenance of resilience within both ecosystems and economies to ensure protection from natural or human-induced perturbations, stresses or shocks
- maintenance of external balance on national accounts to minimise pressure to deplete/degrade natural capital, natural resources and the environment
- the adoption of an anticipatory and precautionary policy approach
- recognising the concept of qualitative development (incorporating a diverse range of indicators of quality-of-life) as holding precedence over simple measures of economic development
- community participation in decision-making processes

Translating this policy agenda into a practical recipe for ecologically sustainable agriculture, (or more specifically, into an agenda for reform), is a complex task. How, for example, is agriculture to ensure that soil productivity does not decline *at all*, (ie. with the rate of erosion equalling the rate of weathering and deposition, for example), as is demanded by the principle of inter-generational equity? What constitutes adequate biodiversity conservation in often seriously degraded landscapes, or where clearing or new development is proposed? Where should the onus of proof lie in applying the precautionary principle to potentially-damaging developments? These difficult questions are best answered with the benefit of quality, integrated scientific advice.

While recognising the terms of reference for this Inquiry, the Commission ought also take into account a number of other significant policy commitments to which Australian Governments are a party. These include (but are not limited to):

- International agreements and conventions on environmental issues such as Biodiversity, Desertification, Global Climate Change, the World Heritage Convention, Agenda 21 (1991 United Nations Conference for Environment and Development), the Ramsar Convention, etc.
- National Competition Policy
- the COAG Water Resources Management Policy
- the Inter-governmental Agreement on the Environment (IGAE)
- the National Water Quality Management Strategy
- the Murray Darling Basin Agreement
- the National Rangelands Strategy

Despite undoubted goodwill amongst farmers and government agencies, together with rapid growth in knowledge of environmental issues associated with agriculture, agriculture is still a very long way away from achieving ecological sustainability.

In ACFs view, Government policy, funding programs, taxation arrangements, legislation and regulation, consultative arrangements and political priorities collectively represent a complicated and tangled mess which, despite good intentions, is seriously lacking in clarity and objectivity in policy goals, objectives and targets.

Information systems are, at best, primitive, and are seriously lacking in any real capacity for performance measurement, evaluation and review. Quite simply, no-one in Government is in any position to quantify the extent to which programs such as the National Landcare Program have achieved their aims, however vague these may have been expressed to date.

Achieving lasting reform to the public policy sphere will be critical to the long-term success of this Inquiry.

The agriculture sector itself, while extremely vocal when it comes to the pursuit of its political agendas, has yet to prove itself capable of reforming both its economic and environmental performance. With a few of exceptions, farmers are very slow to change and adapt, and are generally lacking in the range of skills required to do so. Industry codes and standards are generally absent, and where they do exist, they are formative in content and generally lacking in any system of certification and compliance monitoring.

Arguably, one of the achievements of governments in recent decades may well have been to shield the farming sector from the reality of its own deficiencies. Hence farmers and governments collectively may have created an unhealthy, self-perpetuating relationship which is reactive, piecemeal, and often irrational in its approach to many of the hard issues. This Inquiry should aim to establish a new framework for government/farming relations, and to map out new, less-dependent directions for the farming sector to pursue.

## 2 Market Failure and Market Distortion in Agricultural Land Use: An Environmental Perspective

The development of agriculture in Australia to date has undoubtedly produced much in the way of economic benefits for past and current generations. But this development has come at a heavy cost; a cost which can be expressed in a variety of ways.

As an industry sector, agriculture (ranging from intensive irrigated agriculture to pastoralism) has a cumulative record in environmental degradation which is second to none. Broadly speaking, the most significant impacts have been (and continue to be):

1. the wholesale clearance of native vegetation in arable and pastoral lands, causing the destruction and fragmentation of terrestrial ecosystems, causing (or contributing to) major hydrological changes, salinity, and soil degradation (see also 4\*, below)
2. the degradation of river and estuarine systems and aquifers resulting from extractive demands on the one hand, and degrading processes (eg. grazing, clearing, diffuse-source runoff) on the other
3. degradation of semi-arid and monsoonal ecosystems in the pastoral zone due to continuous, often heavy, grazing pressure
4. soil degradation caused (or \*partially-caused) by poor agricultural practice, including acidity, salinity, compaction, structural decline, and erosion.

Australia is regarded as a megadiverse country, with more than 1 million species thought to exist within a wide range of ecosystem types. 85% of flowering plants, 84% of mammals, 45% of birds, 89% of reptiles, 93% of frogs, and 85% of coastal and freshwater fish are endemic to Australia, being found nowhere else in the world. Australia's many invertebrates are, as yet, poorly described.

Generally speaking, Australians are not very knowledgeable about our ecological heritage. To those of us who are, a drive through any rural landscape provides glimpses of what was once there – remnant patches of bushland in various stages of degradation, a few species of indigenous plants scattered along a drainage line, individual (often very old) trees in paddocks, or the distinctive colour and form of some native grass species.

Degradation of ecological communities can be a very rapid process (wholesale clearing, for example) or it can take decades before it is noticed. In our work we often encounter farmers who have noticed major changes to the landscape during their lifetimes, and are concerned about those changes. Anecdotes are commonly encountered about how there used to be many more bird species, how bandicoots, quolls and gliders were once common, and about the fish that used to be present in the river but are now nowhere to be found.

Going further back in time, the writings of some early settlers about the nature of Australia provide a glimpse of what we have lost to date, and a rough benchmark against which we can compare the present. The following quotes refer to Melbourne in the first couple of decades of European settlement:

*“The Yarra River is deep; but it is difficult to navigate, for boats, on account of the quantity of sunken timber. It is about 60 feet wide, and margined with trees and shrubs. Among these can be heard, the tinkling note of the Bell-bird and ... something like the crack of a whip. ...The river is fresh to Melbourne, where there is a rapid. ...The water continues fresh for a considerable distance below the town... Towards the mouth of the river, there are swamps. covered with a narrow-leaved, white flowered Melaleuca, drawn up like hop-poles, to 30 feet in height... Contiguous to the river, there are some beautiful pieces of land, clear of trees and covered with green grass.....*

*The emus are fast retiring before the white population and their flocks and herds. The large bird of the crane kind, called here the Native Companion, and a Bustard, denominated the Wild Turkey, are plentiful; there are also yellow-tailed Black Cockatoos, Round-headed White Cockatoos, Parrots of various kinds, Pelicans, Ducks, White Hawks, Laughing Jackasses, Kingfishers, Quails and various birds, .....*

**James Backhouse, 1837**

*Day after day it was no slight army of trees against which we had to do battle;..... Some of the trees [probably redgum] were of unconscionable girth, six or eight yards in circumference..... One of these monsters of the wild was fifteen days burning; burning night and day....*

*We entirely routed the quiet of that old primeval forest solitude....*

*Then what curious and novel creatures, – bandicoots, flying squirrels, opossums, bats, snakes, goannas, and lizards – we disturbed, bringing down with dust and thunder their old domiciles about their ears. Sometimes, also, we found nests of young birds and of young wild cats; pretty black creatures, spotted with white. The wild denizens looked at us wildly, thinking, probably, that we were rough reformers, desperate radicals, and had no respect for immemorial and vested rights.....*

*No matter, ..... we must do violence to our sense of the beautiful, and to nature's sanctities; we must have corn land, and we, with immense labour, cleared seventeen acres.....*

**Richard Howitt, Alphington, Melbourne, 1840**

*“I do not believe that any other country in the world is better adapted by nature as a home for waterfowl than Australia. Dreary swamps miles in extent, lagoons of immense size, where the bullrush and reed vegetate in rank luxuriance; creeks and water holes, completely hidden from the view by dense masses of tea-tree scrub, afforded unmolested shelter and breeding places for the birds; and a few years ago, when the sound of a gun was rarely heard in the solitude of these morasses and fens, the country around Melbourne must have literally swarmed with wild fowl...”*

**H. W. Wheelwright, 1857**

In the arable farming zones of Australia, the most obvious manifestation of ecological degradation is the decline of native vegetation and the habitat it provides, resulting in often-severe habitat fragmentation (ie. creating small “islands” of habitat), often in association with on-going degradation of what remains as a result of grazing, the ‘edge’ effect, weed invasion, elevated nutrient levels (agricultural fertilisers), timber-cutting, changed fire regimes, and competition and predation by introduced fauna (cats, foxes, bees, rabbits, pigs, etc.).

According to the 1996 State of the Environment Report, around 600,000 hectares of Australia’s native vegetation is cleared annually, “about half the rate of clearing in the Brazillian Amazon in 1990-91”. Furthermore, “Nearly 70% of all native vegetation has been removed or significantly modified by human activity since 1788”.

The degree and extent of degradation to terrestrial ecosystems is often in proportion to either the value of the land for agriculture, or to the ease with which land can be cleared. For the most part, few extensive patches of bushland remain on the more productive soil types in the best climatic zones, with any remnant vegetation confined mainly to hilltops. Many farming areas are almost totally devoid of native vegetation. In contrast, vegetation communities indigenous to poor soils (eg. Pilliga Scrub in central NSW; East Gippsland coastal lowlands; sandy heathlands of S.W. WA) or to rocky landscapes (eg. Blue Mountains, NSW; Grampians & Wilsons Promontory, Vic) often remain more-or-less intact. Indeed, most of Australia's national parks are only there because they were never considered as being worth clearing for agriculture. Of all land which is suitable for agriculture, only a very small proportion has been reserved for conservation purposes.

Habitat fragmentation – the isolation of small ecological communities due to clearing – has a serious impact on many species.

- Some species of animals exist in very low densities (for example, owls and many species of marsupials), and require very large areas of habitat to survive.
- Some bird and insect species require (for example) a wide range of plant species flowering at different times to provide food; diversity which can be seriously lacking in fragmented habitats.
- Some plant species require specialist pollinators, and when there is insufficient habitat to support the pollinators, the plant species die-out.
- Some species of birds and mammals require a diversity of understory species to serve as habitat, food supplies and/or cover from predation – often the plants to disappear first in poorly-managed remnants are understory species.
- Many species require more genetic diversity than some remnant habitats are capable of supporting.
- Depending on species mobility, once a species has disappeared from an “island” habitat, it will invariably have disappeared for ever from that location.

Across much of the pastoral zone, the major issues relate to processes which, over time, reduce the diversity and structural composition of arid and semi-arid habitats. Here, over-grazing is invariably the major culprit, together with feral vertebrate pests, which collectively depauperate the landscape of much of its shrubby vegetation, suppress tree and shrub regeneration, destroy the habitat of many species of animals and birds, and increase pressure from predation.

In the Great Artesian Basin, the introduction to water to the landscape has had a profound impact. Once this landscape consisted of ephemeral river channels in low-lying flats and broad expanses of sandhills supporting a variety of plants and animals. The provision of permanent water to the landscape through some 40,000 un-capped (ie. permanently flowing) bores has allowed a massive increase in both grazing pressure (cattle, kangaroos, rabbits, etc.), and a major increase in introduced predators (cats, foxes, dogs). In increasing grazing pressure, vegetation is vastly reduced, and habitat for small mammals and many bird species has virtually disappeared, and numerous species are regionally (if not totally) extinct.

Degradation to riverine and floodplain ecosystems is perhaps less obvious to us terrestrial humans, but nonetheless profound. River regulation, changed flow regimes (eg. reduced and/or reversed seasonal variability), water abstractions, deteriorating water quality (nutrients, sediments, toxicants and pathogens), reduced flooding, cold and (sometimes) anoxic releases from dams and weirs, barriers presented by in-stream structures, the degradation of river frontage vegetation, changes to channel and bank structure, and erosion, all constitute degrading processes which are becoming increasingly widespread in many river systems.

Australia's largest and most diverse river system – the Murray Darling – is very degraded. A recent (and as yet unpublished) survey by NSW fisheries failed to find 50% of fish species previously found in the Murray and Murrumbidgee Rivers, and failed to find 20% of fish previously found in the Darling and its tributaries. Aquatic invertebrates are also in trouble. Wetlands decline has been widespread across the basin, and several wetlands assessed as being of national or international significance can only be described as severely degraded. Waterbird diversity and abundance has reduced accordingly.

*“Inland waters of southern Australia are in poor shape, largely because of poor management. Too much water is being taken from some systems, and nutrient and algal levels are of concern. Algal blooms may be becoming a more serious problem.*

*‘Droughtproofing’ by damming has starved rivers of water, and drastically altered seasonal flow regimes in the most developed areas.*

*Pollution, over-allocation of water, changed flow regimes and exotic and displaced species are all affecting native species.”*

***1996 State of the Environment Report***

For the most part, the decline of riverine ecosystems has resulted from agricultural impacts, particularly irrigated agriculture and associated infrastructure.

Regulatory structures, combined with the way that they are managed, can have an appreciable impact on agricultural productivity. For example, farmers in Victoria's Mitta valley used to enjoy brief, beneficial flooding around twice annually, which maintained soil moisture throughout the year and rendered irrigation unnecessary. However, since construction of Dartmouth Dam in the early 70s, (constructed without an environmental impact statement), flooding is both reduced in frequency, and more prolonged and intense when it happens. Pasture destruction (an expensive problem) is common in such flood events. Now most graziers in the valley must irrigate (another added expense), and the very cold temperature of water released from deep down in the reservoir (the main causal factor in the disappearance of native fish below the dam) can seriously retard pasture growth when it is applied to pastures.

Hydrological changes resulting from agriculture vary considerably from place to place, but are nonetheless profound. For the most part, these changes stem more-or-less from inappropriate vegetation clearance. These include:

- Increased aquifer recharge in areas with a saline sub-soil, resulting in rising groundwater levels, saline seeps and scalds (& loss of productive land), and elevated salt levels in rivers and streams

- Erosion of stream banks (due to clearing and grazing) leads to an increasing proportion of flows travelling down river channels (rather than across floodplains), which in turn leads to increased energy dissipation (and erosion) within river channels. This causes in-channel scouring and/or widening, reduced flooding (as required for fertile floodplains and healthy billabongs), reduced in-stream biota and their habitats, increased ratio of *erosion to deposition* on floodplain farms, and on-going growth in expensive river management works. Note here that no regulatory restrictions apply to clearance of vegetation and grazing on river frontages in agriculture, whereas quite strong regulations apply to forestry (for example).
- As native vegetation cover (and a deep, friable root zone) acts as a “sponge” in rainfall events, clearance and associated soil compaction increases runoff during rainfall events, and can be seen particularly in a higher, briefer flood hydrograph. This “peakier” hydrograph, (now a common feature of many agricultural catchments), means increased flood energy, increased erosion (particularly in-stream), reduced in-stream biota, and reduced river channel stability.
- Groundwater use, or perhaps surface drainage systems, can reduce, or even cease, discharge from aquifers into (for example) coastal ecosystems (such as seagrass beds); a fact which has not been well-researched, but which nonetheless may have a considerable impact.
- Levee construction (which has been largely unregulated to date) for flood mitigation simply moves the flooding elsewhere, and in the process, concentrates the energy associated with flood flows into a more confined space, thereby increasing erosion and other damage.

Degradation of coastal ecosystems has, to some extent at least, been caused by the impacts of agricultural activity. High levels of erosion (ie. movement of sediments and nutrients into coastal waters), leaching from acid sulphate soils, reduced flows, pollution, draining coastal wetlands, river barrages and weirs, (to provide for freshwater for irrigation) and the full range of impacts from river regulation have all contributed to the degradation of coastal waters. Of particular concern has been trends in the decline of coastal seagrass beds and coral reefs associated particularly with increased sediment and nutrient loadings.

Australia has an appalling record of mammal extinctions, with 10 (out of 144) marsupial extinctions and 8 (out of 53) rodent extinctions since European settlement. While there has been at least one mainland bird extinction (possibly more) and several island species, 50 species are endangered or vulnerable. 3 frog extinctions are documented, and many species of frogs, reptiles and freshwater fish are either endangered or vulnerable. 76 plant species have become extinct, and over 1000 species are considered either endangered or vulnerable. The parlous state of many plant and animal species and sub-species indicates that many more extinctions are likely.

The need for more accurate assessment of the impacts of agriculture, both in economic and non-economic terms, is a critical one, particularly in terms of (i) resolving cost sharing (who pays?) issues in environmental management programs; (ii) developing a clearer approach to prioritising agricultural and environmental



priorities; and (iii) measuring the performance of programs designed to arrest or reverse environmental degradation resulting from agriculture.

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All levels of Government in Australia have played a major role in shaping Agriculture. Government support for agriculture (both financial and non-financial support) has been a constant feature of the Australian economy. More recently, government support has been provided to redress environmental problems, although the extent to which this has been achieved is arguable.

ACF is concerned that, in many ways, governments' roles in agriculture continue to contribute to environmental degradation, and serve as obstacles to ecological sustainability. Some or all of these deficiencies can be found in all levels of government. To summarise, these deficiencies can be found in:

- government subsidies to the capital and recurrent costs of providing water resources
- government subsidies to the provision of land
- current and historic deficiencies in regulating vegetation clearance and biodiversity conservation on private and leasehold land
- “environmental” subsidies aimed specifically at improved on-farm productivity and property values (ie. *sustaining production*) rather than at addressing ecological and natural resource degradation in a strategic way (*ecological sustainability*)
- special taxation concessions (eg. diesel tax rebate)
- special assistance programs (drought relief; Rural Adjustment Scheme)
- inappropriate planning and environmental laws/controls, including exemptions from many planning controls and environmental regulations which apply to other industries
- failure to recover costs and realise a market return in administering pastoral leases and grazing licences

**Problems in government policy, regulation, taxation and funding programs are discussed in more detail in Section 3**

While ACF is critical of deficiencies such as these, it must be noted that there are a very many other countries which have similar (often worse) deficiencies in agricultural policy and regulation. Similarly, environmental degradation caused by, or arising from, agriculture, is also a major international issue. While this is not an excuse for failing to address the issues of ecological sustainability in agriculture in Australia, the realities of global markets and global competition demands an international response. **The international dimension, and the need for a response, is discussed in Section 4.**

## **2.1 The Economic Dimensions of Environmental Degradation in Agriculture (Market Failure and Economic Externalities)**

To a large extent, the continuing and rapid decline of biodiversity and ecological integrity cannot (and should not) be expressed in economic terms; a principle which is strongly espoused in ESD principles and in international agreements such as the Biodiversity Convention. ACF believes that these ‘intrinsic values’ should stand on their own, irrespective of any market or non-market values which may be assigned by humans.

However, there are undoubtedly many different economic dimensions to this loss in biodiversity, both for current and future generations, including the following semi-discrete categories of economic costs:

1. increased costs (or increased need for expenditure) in ecosystem (and species) management and rehabilitation
2. reduced benefits to agriculture from healthy ecological functioning, resulting in increased farm management costs across a wide variety of areas
3. reduced surface and groundwater quality and availability, leading to increased costs (eg. water treatment and storage costs)
4. increased costs resulting from (for example) inappropriate floodplain or coastal developments for agriculture
5. opportunity costs in terms of reduced potential for non-agricultural activities (eg. tourism, recreation, timber production, fishing, genetic resources)
6. negative externalities, including impacts on other farms, impacts on existing industries (such as riverine and coastal fisheries), and contributions to greenhouse emissions.
7. reduced utility and cultural values associated with natural values which can, arguably, be expressed in terms of economic values and/or economic welfare.

For the most part, these can be expressed as examples of **market failure** and **economic externalities**. To some extent, these many instances of market failure and economic externalities reflect a lack of knowledge, but many other factors are involved. Whatever the reasons, they warrant a range of policy responses which are discussed in subsequent sections.

A brief discussion of each of the above – including examples – follows.

### *2.1.1 Increased Ecological Management and Rehabilitation Costs*

Through its many and varied impacts on terrestrial and aquatic ecosystems, agriculture (in all its forms) has created a pressing need to allocate money and resources to ecosystem management and rehabilitation.

As species and their habitats decline, be they on public or private land, the need for active intervention to conserve these values increases. While very often these resources are simply not forthcoming, the need for funding continues to grow.

To the extent that public expenditure on ecosystem management and rehabilitation is forthcoming, it is spent in a number of ways, including:

- flora and fauna monitoring and survey work

- research into ecosystem management and management issues in areas such as:
  - environmental flows (hydrology, freshwater ecology, floodplain and wetlands ecology, geomorphology, botany)
  - rangelands management (arid lands ecology, pasture preference, stocking rates, soils, hydrology)
  - management of threats to estuaries and fisheries habitats
- preparation and implementation of management plans (including recovery plans) for threatened species and communities
- increased requirements for management planning and active intervention in parks, reserves and other public lands, in part due to the lack of similar habitats outside of the reserve system, and in part due to more direct impacts of farming (eg. weed introduction). Management issues include vehicular access, fencing, weed management, feral animal control, commercial uses (firewood, timber, bee-keeping, grazing, mining), fire management, recreation, etc.
- increased need for the development of policy and regulatory statements such as (for example) State Environment Protection Policies aimed at reducing diffuse-source pollution, improving water quality, and protecting freshwater and estuarine habitats
- grants to non-government organisations for biodiversity conservation initiatives such as:
  - biodiversity conservation on private land (eg. fencing remnant vegetation; streamside rehabilitation; revegetation)
  - species monitoring & research (eg. bird counts/banding; mammal surveys)
  - policy development & advocacy
  - education and extension

### *2.1.2 Reduced Ecological & Related Services to Agriculture*

Agriculture undoubtedly receives a variety of ecological services from the natural environment.

Healthy soils are living systems in their own right, and contain a wide diversity of biota, including invertebrates, microorganisms and fungi. While clearing for agriculture alone does much to damage and change soil biota, the biota that remains contributes much towards soil productivity, playing a critical role in cycling carbon and other nutrients, in liberating nutrients and trace elements from the soil, and in maintaining soil structure.

Agricultural practices can do much to damage soil diversity and productivity. Soil compaction, excessive tillage, fertiliser application, over-grazing and irrigation are all examples of farming practices which can damage soil biota. Similarly, secondary salinity and acidity – in themselves the results of inappropriate land use – damage soil biota and (in the process) soil productivity.

Native vegetation and wetlands can provide habitat for a variety of native animals which prey on agricultural pests. Arthropods, predatory insects, birds, small dasyurid marsupials and reptiles provide services to agriculture by controlling pest insects in particular. Birds of prey help to control numbers of rodents (in cropping zones) and rabbits.

Barmah and Gunbower forests – remnant redgum floodplains which have been significantly degraded by river regulation and reduced flooding – nonetheless still provide habitat for large numbers of ibis. It is estimated that these ibis provide pest management services worth \$750,000 annually to local farmers.

A multitude of other examples exist. Retention of some tree cover can reduce wind damage to crops, and reduce stock losses from extreme weather conditions. Tree retention (or revegetation) on high salinity recharge zones, or on aquifer interception zones, can prevent (or mitigate against) the spread of dryland salinity. Some research is showing that in some areas, native grasses, combined with low-to-medium tree cover, can increase grazing productivity limiting the effects of sun, wind and frost, and by extending the growing season. And a healthy diversity and cover of vegetation in pastoral country enhances productivity and resilience to drought.

Attempts to improve productivity by displacing indigenous vegetation do not always meet with success. Our history is littered with examples of plant species introduced with the intention of improving productivity, but which have achieved the opposite. According to the 1996 State of the Environment Report, 463 exotic plant species have been introduced as pasture into the pastoral zone since 1947, and this number continues to grow. “Only 5% of these have proved useful as fodder, yet 13% have become problem weeds”.

### *2.1.3 Reduced Surface and Groundwater Quality and Availability*

As discussed above, clearing for agriculture, erosion associated with agricultural practice (grazing, soil degradation, etc), pollutants in diffuse-source runoff, river regulation and water extraction for irrigation, mismanagement of artesian water, and groundwater pollution all have an impact on water resources.

A few examples are briefly discussed as follows:

- As water entitlements are issued within a surface or ground water system, (which has its own environmental impacts) allocations may (and do) reach the point where each further allocation reduces the security and reliability of supply for existing users. There are many examples throughout the Murray Darling in particular of this continual de-valuing of water entitlements due to over-allocation and over-exploitation.
- Declining water quality, together with episodic events such as toxic cyanobacterial blooms (blue-green algae), increases the cost of treating and/or storing water for domestic, industrial and (in some cases) stock watering purposes. In rural Victoria, for example, only a very few domestic water supply systems meet acceptable health and quality standards, largely as a result of agricultural impacts.
- Around 40,000 un-capped artesian bores flow into lengthy bore drains 24 hours a day within the Great Artesian Basin, a fact which has significantly reduced artesian pressure across much of the basin, and hence reducing water availability. These, combined with a lengthy (and very leaky) bore drain network, have simply provided water to many vertebrate pest species, adding

grazing pressure to a sensitive landscape. This is a complex issue with serious economic and ecological implications.

- Some coastal aquifer systems have been over-allocated, and use exceeds the recharge rate. In such circumstances, saltwater can ‘intrude’ into the aquifer, rendering it un-useable (or at least potentially un-useable). One example here is the irrigated horticulture zone on eastern Westernport Bay, Vic.
- Similarly, “beneficial” flooding in many rivers can improve soil productivity and eliminate any need for irrigation. However in many rivers this flooding has been seriously curtailed by river regulation (eg. Mitta River, Vic), by vegetation-related channel erosion (eg. Cann Valley, East Gippsland), or by both (eg. Murray River).

#### 2.1.4 *Increased Costs Resulting from Inappropriate Developments*

Undoubtedly many areas of Australia are now farmed which probably should never have been farmed, or at least not to the extent that farming takes place now. Here are a few examples:

- Many riverine floodplains have been inappropriately cleared and developed for agriculture. In some areas, the reality of natural flooding patterns has incurred a cost either in terms of pasture/crop damage, lost productivity, increased flood mitigation costs, reduced irrigation water availability (ie. from increased dam airspace), or all four of these. And pressure to deal with The recent case where the Murray Darling Basin Commission was forced to release a large volume of water from Hume Dam, and subsequently agreed to compensate floodplain graziers for lost pasture, highlights the costs of such inappropriate development.
- In some locations (eg. SW Victoria) coastal grazing activities have, over time, denuded or degraded natural vegetation, and probably constitute a major factor in coastal erosion and loss of land.
- Clearing and draining low-lying coastal soils known as ‘acid sulphate’ soils can profoundly change soil chemistry, resulting in highly acid runoff. This can have a devastating impact on the productivity of coastal fisheries.
- Clearing mangroves for (for example) aquaculture (mainly an overseas phenomenon) can have unexpectedly large economic impacts. In Queensland, it has been estimated that the average hectare of Mangrove habitat is worth \$8,000 annually in fish production.

#### 2.1.5 *Opportunity Costs in Agricultural Land Use*

The area of opportunity costs arising from agricultural land use is difficult to discuss in anything other than abstract terms. The fact that agriculture exists (and that land has been converted to this end) means it is difficult to envisage non-agricultural land uses. However, there is an argument that, in some cases at least, alternative, less damaging, yet profitable land uses could have constituted a relatively “*more ecologically sustainable*” use of land than agriculture.

Without re-iterating too much about the impacts of agriculture (and associated clearing), agriculture has been developed at the cost of some other forms of land and resource use.

Nature conservation in itself is a land use which can generate considerable economic activity in tourism and recreation in particular. A 1994 study of the economic value of Grampians National Park in Victoria (Read Sturgess and Associates) estimated that the Park generated \$398 million annually for Victoria, with approximately ½ of this being spent in the Grampians region. If more natural areas remained for such purposes, more of this sort of economic activity could be generated.

Similarly, in some natural coastal and riverine areas, or in areas of bushland with low agricultural potential, residential or tourism accommodation may well have proven to be a more productive use of land than clearing for agriculture.

In some marginal grazing areas, apiarists working in remnant bushland actually generate an equivalent or higher net return per hectare in honey production than (for example) sheep and cattle grazing. While bees do have considerable negative environmental impacts in their own right, the total impacts would, I suspect, compare much more favourably to the impacts of farming in such areas.

Other land uses, including timber production in some areas, could conceivably be a more valuable and less damaging use of land than clearing for agriculture.

In some areas, large areas of prime agricultural land is being lost from production for low and medium-density residential development; development which could be readily located (via planning controls) onto less productive land. If (for example) high salinity recharge zones were “retired” from agricultural production and revegetated, they could also double as low-density urban development subdivisions with land-use covenants attached, thereby solving a salinity problem as well as ensuring that the farmers concerned can realise some value from the property concerned.

The Murray Darling river system used to support firstly a major indigenous fishing industry (fish was a staple food for river valley communities), and more recently, a large commercial fishing industry. However with increasing river regulation

#### *2.1.6 (Other) External Economic Impacts*

Throughout Australia the external economic impacts are many and varied, and for the most part are quite readily apparent. Quantifying these externalities is another question, however, and despite some good attempts (eg. ABARE’s work on the external costs of dryland salinity), generally assessment of these external impacts has been lacking.

Note that some of the examples discussed elsewhere in this section can also be described as negative economic externalities.

Again, without going into too much detail, we offer a few general examples of negative economic externalities as follows:

- Up until recent times, the Murray Darling river used to support a large fishing industry. In pre-European days, these inland river valleys used to support high densities of Aboriginal people, and fish was their staple diet. More recently, the

Murray Darling used to support quite a large commercial fishing industry. Now, however, river regulation, water extraction and a range of other impacts has reduced these fisheries to a small fraction of their former size.

- Impacts on coastal fisheries (caused by elevated sediment levels, changed flow regimes, water pollution, leachates from acid sulphate soils, river regulation, etc.) is also likely to be significant in economic terms.
- More generally, changes to hydrological regimes (see above) can have a costly economic dimension in areas such as water treatment, accelerated erosion, river management, and flood damage (eg. from levee construction).
- Salinity is a problem which only rarely affects the landholdings which have contributed most to the problem; rather salinity is generally manifested outside of the major recharge areas. Dryland salinity in particular is a problem where the major underlying causes (vegetation clearance, particularly in high recharge zones) are typically manifested on properties well away from the most significant recharge zones. Salinity can also have a major economic impact on (for example) road maintenance costs, water quality management, and the suitability of land for urban subdivision.
- Pastoral activities have had – and continue to have – a significant impact on the value of traditional economies of Aboriginal people, often severely affecting the abundance and distribution of plants and animals used for food. Note here that, particularly in northern and central Australia, many Aboriginal people continue to practice their traditional ways of life if and where they can.
- The National Greenhouse Gas Inventory (NGGI) has estimated that land use change (and forestry activities) are still responsible for the net emission of approximately 130 Mt of greenhouse gases (CO<sub>2</sub> equivalent - National Greenhouse Gas Inventory Committee 1996). This is about 23 per cent of total emissions. Broadacre native vegetation clearing is thought to be the chief contributor to this total, with clearing rates of up to 660,000 hectare/annum contributing as much as 160 Mt of emissions. (The NGGI stresses that there is a great deal of uncertainty attached to estimates of broadacre clearing in Australia and therefore of emissions associated with that clearing. Notwithstanding this uncertainty, however, even if current estimates overstated the extent of clearing by five times, the extent of clearing in Australia would still be very substantial - higher certainly than the level of vegetation clearing in any other industrialised country.)

Affects on future productivity also have to be considered as an economic externality in this respect. Where current land use is leading to declining soil productivity over time, it cannot be claimed that the full cost of this degradation will always be internalised by the current generation of farmers. Indeed, as is the case in some areas, it may take one or more generation for the trends in land degradation to become obvious to any extent.

Irrespective of this, there are intractable difficulties in quantifying such costs for future generations as the cost may be borne to an increasing extent by each successive generation. Certainly there is no way that a conventional cost-benefit approach can be useful here, as the application of any discount rate above zero will involve a very limited timeframe. In other words, as a measurement of inter-generational equity, discounted present value analyses are of no use whatsoever.

### 2.1.7 *Reduced Utility and Cultural Values Associated with Natural Values, but Which are Difficult or Impossible to Quantify*

The various forms of ecosystem and environmental degradation which are caused (or part-caused) by agriculture cause a decline in various utility and cultural values; values which are not generally manifested in terms of a market transaction, but values which exist nonetheless.

These values include “intrinsic” values such as aesthetic values, heritage values, “spiritual” values, wilderness values, instinctive response (eg. to a shady spot by a river), and lifestyle values. More utilitarian values associated with biodiversity may include scenic quality, naturalness, existence values, option values, vicarious use values, and bequest values.

While many attempts have been made (using various methods) to quantify these values in economic terms, most methods are contentious, and in some instances (at least), the dollar values identified are difficult to subject to any test of falsification (or verification). Nonetheless it is not logical to assert that these values do not exist – they do.

To the extent to which natural environmental values can be expressed in economic terms, it must be acknowledged that most people know virtually nothing of Australia’s biodiversity, and its ecological, geophysical and climatic history and processes. So the knowledge required for informed debate on environmental management is in itself a *very* scarce commodity; an inescapable fact which makes any consideration of the economic value of nature extremely problematic.

Fundamental to economics is the anthropocentric values which underpin things like wants, needs, likes, dislikes, and time preferences. Without anthropocentric values, economics would be a meaningless concept.. In economic terms, ecologically sustainable development can probably be summarised as ‘non-declining utility’. So irrespective of the extent to which non-market values can be expressed in economic terms, these values cannot be ignored, discounted, or neglected simply because of difficulties in measurement.

## **2.2 Market Distortion in Agriculture**

The examples of market failure and economic externalities discussed above contribute (both collectively and individually) to a distortion of agricultural commodity prices and agricultural investment patterns in particular.

Deficiencies in agricultural policy, regulation, taxation and funding programs also contribute to market distortions. These deficiencies are discussed in more detail in Section 3, but are referred to in passing in this section.

Provided that markets account for all of their own failings and shortfalls, (a major assumption in itself), it must be assumed that the existence of market distortion is, by definition, both inefficient and undesirable.



The following examples (again, these are invariably inter-related) of the form that market distortion can take are discussed in more detail below:

1. distorting patterns of farming investment and land use
2. windfall gains and losses
3. preventing or inhibiting competition and market access
4. distorting commodity prices

As discussed above, and as covered in Section 4, there remains a very significant international dimension to these “market distortions”; a dimension which warrants a well-resourced strategy at the Commonwealth Government level.

### *2.2.1 Distorting Patterns of Farming Investment and Land Use*

Many factors – both past and present – have influenced the pattern of agricultural land use in Australia. To a considerable extent, agricultural settlement has been driven by market forces – a combination of land and soil suitability, climate, the price of land, and prices in various commodity markets. However, other factors have also been at work, and these factors have distorted patterns in agricultural investment and land use in ways which have invariably been detrimental to the environment.

Irrigation is one area where the provision of both capital and recurrent subsidies has distorted land use and land and water values, incurring massive environmental costs in the process.

Historically, irrigation development was encouraged and approved-of by governments at a time when little thought was given both to the economic costs and benefits of exploiting water resources. Governments launched enthusiastically into big capital works projects involving dams, weirs, irrigation channels and other infrastructure as a way of ‘opening-up’ land to intensive agriculture. Governments also used irrigation developments to provide opportunities for returned servicemen. In some locations, governments were also eager to encourage developments which involved little in the way of public investment, again by approving the extraction of water for little or nothing in return.

Access to this cheap irrigation water turned cheap land – often located in areas of moderate or low rainfall – into something much more valuable. The generally high security of irrigation water also meant that many farmers in rain-fed regions close to the coast were encouraged to sell-up and move into irrigated regions.

ACF argues that this shift has resulted in many rain-fed farming regions out-competed on both price of outputs (eg. milk) and the costs of production (including the price of land). For example, many irrigation developments offered horticulturalists the chance to invest in irrigated horticulture without having to develop their own water storage infrastructure. Similarly, some rain-fed dairy regions (such as South Gippsland in Victoria and some NSW coastal regions) became relatively less competitive than dairy farms built on cheap land and with the benefit of free or cheap water. Market prices for these commodities changed accordingly.

In effect, this trend has seen farmers in higher-rainfall areas under-cut by irrigation regions, with profits, income and land values in rain-fed regions declining as a result.

Partly as a result, it is now quite common to see farming land on high-rainfall regions (often on very good soils) seriously under-utilised and under-capitalised, with many now a focus for low-density 'hobby' farms and urban subdivision. In the process, much of Australia's very best agricultural land is being permanently taken-out of production.

Significantly, government subsidisation of irrigated agriculture continues. The Commonwealth Sugar package continues to support projects such as the Walla Weir on the Burnett River; a weir which the then Commonwealth EPA found should not proceed in its advice to the Minister for the Environment, Senator Hill, due to uncertainties about its impact on the rare lungfish (a species which has been nominated for listing under Commonwealth endangered species legislation). This instance of subsidisation will encourage further investment in sugar which would otherwise not take place. Right now, Queensland's \$1 billion Water Infrastructure Package will add further subsidies to irrigated agriculture; subsidies which will see further environmental degradation and market distortion.

There are many other examples of market distortion. One of these involves subsidies to pastoral activities. Here, low leasehold "rent", failure to recoup leasehold administration costs (ie. cost recovery shortfalls), and direct subsidy programs (including state agency monitoring, management, advisory, feral animal control, fire management, and assistance programs) mean that investment in many pastoral regions is made more viable by artificial means. (These subsidies are documented by the Land and Water Resources Research and Development Corporation publication [R&D for Sustainable Use and Management of Australia's Rangelands](#).) As such, much of Australia's semi-arid, arid and monsoonal land has been developed and maintained for pastoral purposes which, in some cases, may otherwise remain un-developed and available for other purposes (eg. conservation, traditional economic uses). However, while these subsidies remain, the environmental condition of many of these leaseholdings is poor.

Similarly, cross-subsidies in the provision of some forms of physical infrastructure (roads and power in particular) mean that many quite remote areas can be developed to support agriculture where otherwise the economics may not have stacked-up.

In some ways, the failure to protect remnant vegetation communities or watercourses with high conservation values from agricultural development can be seen as a distortion of investment patterns, effectively undervaluing conservation values and 'lowering the price' of what otherwise may be very valuable land for conservation purposes.

Similarly, approval to clear wetlands, to farm on floodplains, to clear mangroves, or (by default) to pollute and degrade seagrass beds represents a market distortion in that the true productivity value of these ecosystems for commercial and recreational fishing in particular can be discounted in favour of agriculture, when agriculture may actually be the less valuable form of land-use.

Note here that, as individuals concerned for environmental values (and the production values they support) cannot (with a few possible exceptions) participate in the market for such land, the intervention of Government is both legitimate and warranted. Certainly the frequent lack of evaluation process (both economic and environmental) is a concern here.

To summarise, the policies of governments – funding policies, non-intervention policies in planning and regulation – can artificially reduce land prices and related costs in some areas, which in turn affects patterns of land use and investment. Invariably, the various forms of market distortion in land use

### 2.2.2 *Windfall Gains and Losses*

Agriculture has benefited from windfall gains probably more than any other sector of the Australian economy. Over many decades, much of Australia's farming and pastoral lands and water resources was originally allocated for agricultural use via:

- squatting
- pastoral or grazing lease (at peppercorn rent)
- government grant or issue

At the time that land was issued, there was a corresponding windfall loss suffered in one or more of the following ways:

- Aboriginal dispossession
- failure to recoup market value (or cost) for the land, (albeit “unimproved” land), water, and water infrastructure
- loss of (often significant) biodiversity values

Of course, many current landholders have paid market value for their land and their water entitlements, and hence many of these ‘startup’ windfall benefits arguably have no more relevance. Nevertheless, windfall gains (and corresponding losses) continue to be a feature of agriculture in Australia.

A number of brief examples follow:

- In some wool production areas, subsidies for pasture improvement are still common, ostensibly as a means of managing dryland salinity, but often with little or no regard for efficacy in salinity management, for matching land capability with land use. Needless to say, subsidies to upgrade from annual to improved perennial pastures can provide a considerable productivity windfall, which can actually help to entrench inappropriate and unsustainable uses of land. *Windfall losses are experienced by Governments and taxpayers who pay the cost of pasture improvement without realising any direct benefits.*
- In some parts of Australia (particularly Queensland), the issue of free or subsidised water entitlements is still common. Here, dams and other infrastructure are constructed with considerable government subsidies, and irrigators (via modest capital contributions) gain their water entitlements at a price which is considerably below both cost price and market\* value (\*assuming a distortion-free market). Indeed, for infrastructure maintenance and

refurbishment, or where new infrastructure is involved, Government subsidisation is common. For example, for any irrigation-related capital works, the NSW Department of Land and Water Conservation continues to provide a 30% capital subsidy, and most probably provide a subsidy in the form of interest-free repayment requirements in the process. When ACF assessed a (then) proposed dam at Teemburra Creek near Mackay, we calculated that each of 60 irrigators would receive a capital subsidy in the order of \$¼ million each; clearly a windfall gain granted by two very magnanimous (Federal and State) governments! *Again, Governments and taxpayers bear the loss, as do riverine ecosystems.*

- Irrigation drainage schemes are common in the southern Murray Darling basin, with the aim of protecting the top metre or two of irrigation properties (and regions) from the effects of rising groundwater levels and salinity. While hundreds of millions of public “environmental” funds are spent on drainage subsidies, the public environmental benefits are illusory. ACF seriously doubts that investment of environmental program funds in such schemes produces any public benefits, but rather are simply a windfall gain for irrigators in the form of increased property values. *In addition to costs in terms of public funds, there are also environmental costs. Those schemes which dispose to rivers actually contribute moderate to high nutrient and turbidity loadings, as well as salt, and therefore have a negative impact on river health. In an average flow years, the Murray Darling Basin Commission estimates that 10 per cent of the phosphorous inputs into the Murray come from irrigation drains. Irrigation drains can also transport sediment particles, nitrogen, pesticides and herbicides into rivers, lakes and wetlands. Those which dispose to land create a longer-term problem for the river in terms of slow-moving, highly saline groundwater which, too, eventually gets back into the river, incurring a huge cost on future generations.*
- The proposed upgrading of pastoral leasehold tenure (subsequent to the Wik case) also represents a potential windfall gain. Currently, pastoral leases entitle the lessees to conduct pastoral activities only, and exclude other land uses such as intensive horticulture, cropping and tourism. The Federal Government’s proposed 10 point plan in response to the Wik decision will effectively provide many pastoralists with a windfall gain in that their leaseholdings have been upgraded to accommodate other, potentially more lucrative forms of land use. *The windfall loss in this instance would be shared by (i) existing and potential native title holders who might otherwise claim the right to a say over such developments, and (ii) state governments, insofar as a lease upgrade increases the difference between rent paid by the lessee and the value of the leaseholding.*
- The diesel fuel tax rebate scheme for farmers, justified in that (to a greater or lesser extent) some of the fuel consumed by farmers is spent “on farm”, (and hence there is a lesser requirement to pay for road use, ie. as a proportion of fuel consumed), represent a further windfall gain. Firstly, Commonwealth fuel taxes are only partly aimed at covering government road expenditure, and some of the tax (at least) is for general revenue raising. Secondly, the unit cost of rural road construction and maintenance is much higher than costs in more built-up areas. And thirdly, much farm produce is transported by truck on roads, and trucks are responsible for a much higher proportion of damage and wear to roads than cars. Hence the diesel fuel rebate represents a windfall gain of sorts.

### 2.2.3 *Distorting Competition and Market Access*

In many ways, competition within – and between – different farming sectors, and between the various industries which service agricultural enterprises, is distorted. Again, there are many instances where this is so – too many for a comprehensive analysis in this submission.

In irrigation systems where water prices charged by water management agencies fail to recoup capital and/or recurrent costs, it follows that investment decisions by these management agencies in ensuring continued (or expanded) supplies will also be distorted. This in turn distorts the market for other forms of water supply investment such as private storage schemes, (eg. on-farm dams in high-rainfall areas), private groundwater schemes, and private water reticulation infrastructure.

The availability of underpriced, subsidised water also affects the way water is used. Firstly, many irrigators use water in the production of goods (such as wool, meat and grain) which may otherwise be marginal or unprofitable if the full economic price of water were charged. In this way, low water prices support private investment in ventures which might not otherwise take place, rather than allocating water to higher-value outputs and/or the environment.

Secondly, low water prices enable some irrigators in some regions to use much more water on their farms than is possible or desirable. If water is both cheap and reliable, many irrigators may have little – if any – incentive to spend money on water efficiency measures such as drainage reticulation and storage for re-use, soil moisture monitoring, drip or subsurface irrigation systems, and “intelligent” systems for monitoring conditions and controlling water use. As a result, more water is used (or, rather, wasted) than is necessary, and the potentially lucrative market for irrigation technologies, equipment and expertise is suppressed.

Another example is the Commonwealth Sugar Industry Infrastructure Package. SIP is a highly selective industry assistance package with no obvious rationale other than to provide capital funds to assist one particular irrigated crop to expand. Why this industry needs to expand, or why it needs assistance to do so, has never been clearly justified in economic, strategic, social or environmental terms. Nevertheless, rivers are dammed and weirs constructed with funds from the Sugar Industry Package expressly to accelerating investment in an industry which has negative environmental impacts. Without the SIP, it may be that (i) little or no investment of that nature would have taken place, or (ii) those funds could have been directed to investments with a higher net return (eg. bananas, or indeed something quite unrelated to irrigated agriculture), or (iii) expansion in sugar would have taken place only through improving efficiency of water use in existing crops and selling the savings to new developments. Hence SIP (and the recently-announced serves as a distortion in the marketplace.

Some forms of agricultural investment suffer from distortions in other markets – agroforestry, for instance. As has been previously submitted to the Commission by

ACF, resource pricing and accounting policies of state forestry agencies currently provide for considerable price subsidies, and pricing policy and accounting practices (as opposed to overall agency annual account audit) are not subject to any form of independent audit, price determination, or scrutiny under the Trade Practices Act. Hence private investment in commercial farm forestry (to the extent that it exists at all) is consistently undermined.

#### *2.2.4 Distorting Commodity Markets*

Agricultural commodity prices too are similarly distorted, both nationally and internationally, by the many instances of externalities and other market imperfections in the farming sector.

If one accepts the validity of points discussed above in Section 2, there are two inescapable conclusions:

- the prices of Australia's agricultural commodities are distorted by externalities and other market imperfections;
- for the most part, market prices fall well short of the true costs of production incurred by current farming methods

Whether or not this means that commodity prices must rise as part of any transition to ecologically sustainable agriculture is a moot point. Some of the costs of improved land and environmental management may well be reflected in either higher commodity prices or reduced profit margins, and some currently unsustainable farming operations may become un-viable. On the other hand, improved land and resource management, improved price signals, increased knowledge and skills, improvements to the public policy arena, and a more diverse and adaptable industry, could see some costs (and prices) fall. The important thing is that a rapid, well-managed transition to ecologically sustainable development take place, and the impact of this on commodity prices will 'come out in the wash'.

Given the existence of similar problems internationally, it must also be assumed that these same statements apply throughout the world. This raises the question – can Australia address the need for ecological sustainability in our own agricultural production without also pursuing the issue internationally? The answer is most certainly no.

The reality of global markets mean that the removal of these market distortions and imperfections in Australian agriculture could (in some commodity markets at least) compromise the relative position of Australian agriculture in the marketplace.

This issue cannot be ignored. It demands that Australia pursue the issue of ecologically sustainable agriculture internationally as an integral part of any strategic approach to ecologically sustainable agriculture. This will be a slow process, however, and international commitment to action on ecologically sustainable agriculture must never become a prerequisite to reform in Australian agriculture.

### 3. Progress Towards a Strategic Framework for Ecologically Sustainable Agriculture – A Critique

ACF believes that we have a very long way to go to achieve ecological sustainability in agriculture. Vegetation continues to be cleared, and biodiversity generally continues to decline. The status of riverine ecosystems and water quality is deteriorating. Salinity, soil erosion, acidity and other soil problems are becoming more and more widespread.

To some extent, these environmental problems have contributed to the economic difficulties now being faced in agriculture, although they are by no means the only factors at work here.

Over the last ten years or more, state and commonwealth government funding programs (Landcare, Save the Bush, 1 Billion Trees, etc.) have directed many hundreds of millions of dollars into what can loosely be described as ‘sustainable agriculture’ programs. Community-driven processes (some of which have been co-opted under state government legislation and process) have also evolved quite rapidly over this period. Taxation arrangements have been reviewed and refined, regulatory regimes (particularly land clearing) have been introduced, State of the Environment Reporting Programs trailed, and information systems developed. Research and development has taken significant strides, and education and extension programs have gone in and out of fashion. State and commonwealth agencies and their levels of skills and expertise have evolved also.

But how much has actually been achieved? Indeed, do we really know? Have improvements in some areas been outweighed by degradation in other areas? Are public and private funds being spent in the top priority areas? What are the top priorities, and what, specifically, should be our aims and targets? Why? Are we meeting those aims and targets? Indeed, do we ever review our progress? How would we know if we were not? What other policy instruments should be employed (or reviewed)?

**ACF contends that these and other questions have never been systematically addressed in the public policy arena.** ACF further contends that, despite government involvement in all its forms, Australia’s agriculture remains ecologically unsustainable. Overall, we are going backwards.

It is always easy to be critical in hindsight, however. The evolution of programs such as the National Landcare Program has been a learning experience for all involved, and the quite high level of awareness of sustainability issues in agriculture is perhaps the most important asset we have to build on in any transition to ecological sustainability. The challenge now is to review progress to date and develop a renewed and more strategic approach to ecologically sustainable agriculture.

The following represents a very brief, generalised and incomplete discussion of Government involvement to date in the issue of ecological sustainability in agriculture.

### 3.1 Strategic Planning: Setting Meaningful – *and Measurable* – Goals, Objectives and Targets

A key component of policy in ecologically sustainable land use is to have a strategic planning process that provides

- clear goals, objectives, targets
- performance indicators and measurement
- a means of co-ordinating responsibilities and ensuring quality feedback
- evaluation and review

We assert that no meaningful strategic framework currently exists, either in government or in Australia's various farming sectors. And while it is difficult to contemplate a transition to ecologically sustainable agriculture in the absence of a strategic framework, a number of factors need to be taken into account.

#### 3.1.1 *Setting Goals, Objectives and Targets*

When we talk of Landcare or the Natural Heritage Trust, there is still no sense of any real objective at the end of the day. We are concerned that these packages comprise a range of political or organisational objectives which have been constructed largely as a response to political pressures and opportunities, rather than as a package prepared to resource a comprehensive strategy for ecologically sustainable agriculture.

Typically, a package such as the NHT is conceived as part of the political process, with politicians (understandably) balancing political opportunism with advice from a range of sources on what the environmental, land management and industry 'assistance' priorities actually are.

Once the overall components of a package such as NHT have been developed, responsibilities for deciding priorities in expenditure are, to an increasing extent, being determined by regional and state-based committees which purport to be representative of the wider community. In some states (eg. Vic & NSW), these structures are enshrined in legislation, and in Victoria at least, the Catchment and Land Protection Act actually prescribes that the majority of members must be farmers and/or irrigators.

These 'community-based' structures apply their own views, values and knowledge to the development and prioritisation of bids for government funding.

In ACF's observation of these processes to date, these bids strongly favour on-farm initiatives aimed at productivity improvements and mitigation of forms of land degradation which impacts directly on agricultural productivity. Generally speaking, very few resources are ever allocated to initiatives aimed primarily at biodiversity conservation. Similarly, virtually no work is being done on inter-generational trends and risks and how these should be responded to.

**To summarise, public funds are allocated primarily towards the protection of farm productivity from the (mainly short-term) effects of land and water resource degradation. The emphasis is on *sustaining production*, as distinct from**



***ecologically sustainable land use and management. A broad strategic framework to address ecological sustainability is comprehensively absent.***

ACF has explored this question in a number of areas. One of these is **dryland salinity** where the distinction between production subsidies and environmental rehabilitation is particularly blurred and problematic.

The four state governments in the Murray Darling Basin all manage initiatives which incorporate dryland salinity objectives to a greater or lesser extent, as does Federal Government through the National Landcare Program and the NHT. Often these programs are incorporated into broader land and catchment management programs. The Commonwealth Department of Primary Industries and Energy, together with various state government departments (agriculture, conservation and land management), are generally involved in administering these programs, sometimes incorporating the advice of community-based committees. Many other agencies are also involved in salinity planning and management to some extent, including the CSIRO, the Murray Darling Basin Commission, organisations such as the Land and Water Resources Research and Development Corporation, some state water agencies, and the tertiary research sector. With a handful of exceptions, involvement of local government in dryland salinity is negligible.

For a variety of reasons (ref. [Fighting Salinity on a Wool Cheque](#), attached), there are currently few mechanisms or measures in place to assess the efficacy of dryland salinity and related expenditure. To be blunt, this overwhelming lack of financial accountability and performance reporting would not be tolerated in other areas of government expenditure.

At the same time, explicit objectives against which performance can be measured are often lacking. While the various salinity programs operating in the Murray Darling Basin are obviously intended to address rising groundwater levels, secondary salinity and in-stream salt levels, clear objectives, targets and performance indicators related to these intentions are seriously lacking. This is further compounded by the difficulties inherent in measuring progress when the benefits of effective programs can take some years to become apparent.

In our assessment the precise objectives of salinity and related programs remain vague and unclear, and open to considerable debate. A number of important policy questions have yet to be clearly answered. For example:

- How are the various manifestations of dryland salinity weighted for policy purposes? (eg. the on-going viability of farmland which is susceptible to secondary salting; management of in-stream salt levels; reduction of recharge; education and extension; etc.)
- Is salinity regarded as a permanent reality to which farmers must be encouraged to adapt while still maintaining or improving productivity levels?
- In terms of arresting or reversing dryland salinity trends, what are the specific objectives and targets?

- Are the above questions mutually exclusive, or does the pursuit of one objective (i.e. protecting farmland) come at the expense of another (in-stream salinity levels)?
- In terms of in-stream salinity, is the objective simply to defer impending disaster for as long as possible, or to avoid it altogether?
- Should salinity programs incorporate subsidies towards improved farm productivity?
- Why, to what extent, and under what circumstances, should salinity subsidies generate a positive real rate of return for (a) the landholder, and (b) the economy as a whole? Given the enormous size of economic externalities, to what extent should externalities be factored into cost benefit analyses?
- To what extent, and why, do salinity programs focus on economic outcomes, rather than on social and environmental outcomes? Comments by the Victorian Auditor General are relevant here:  
*“Mechanisms to place values on social and environmental factors need to be developed by government to ensure that decisions which are made in the future canvass other than economic considerations.*  
 Special Report No 19, Victorian Auditor-General’s Office, March 1993, p8
- How, specifically, are economic, social and environmental outcomes to be balanced? While some forms of ‘multi-criteria’ analysis are now in use, their subjectivity means that their practical value can vary enormously.
- Why are politically difficult options (e.g. regulation of land use and diffuse-source runoff; land retirement; etc) generally excluded from serious policy debate?
- Should innovation and experimentation in farm management be more actively encouraged?

For all of the work that has been undertaken on salinity over many years, the position of governments on these and other questions remains unclear. This lack of clarity is further complicated by the fact that it is difficult to separate salinity objectives from other objectives. As awareness of the connections between different forms of land degradation has grown, many land and catchment management programs have come to incorporate salinity management. For example, tree-planting is now undertaken for a multiplicity of reasons, including erosion control, recharge control, groundwater interception, nature conservation, water quality protection, windbreaks and shelter for stock and crops, landscape and aesthetic purposes, commercial timber and firewood production, and disposal of sewage effluent.

The development of integrated catchment management strategies incorporates an even wider range of objectives, including the control of vegetation clearance, public awareness, environmental flow regimes and freshwater ecology. Notwithstanding the need to integrate these different objectives, there remains a clear need to evaluate performance against them all.

As with any other area of government and private sector expenditure, mechanisms are needed to provide reliable feedback on the extent to which value for money is achieved. Hence any salinity-related program should measure progress towards

slowing or reversing trends in salinity, and to direct resources towards results. To date, however, there have been few detailed assessments or audits of salinity programs throughout the study region.

Inter-generational equity, the maintenance of constant natural capital, and the protection of biological diversity and ecological integrity are three principles fundamental to Ecologically Sustainable Development (ESD). However these principles are yet to be incorporated into the objectives of salinity management programs anywhere in the Murray Darling.

It is our view that these and other ESD principles should form the basic policy parameters for land and catchment programs generally. In particular:

- the overall productivity of agricultural land and freshwater resources in the region should not diminish over time, except where current productivity exceeds land capability;
- the actions of past and present farmers should not be permitted to compromise the welfare of future generations of land and water users;
- the diversity and integrity of freshwater and terrestrial ecosystems must be ensured, particularly through conservation and rehabilitation programs.

A study of other areas of agricultural policy (eg. rangelands management; irrigation salinity; acidity; erosion, drought relief) would in our view reveal similar problems to those which exist in dryland salinity.

ACF encourages the Commission to investigate these important questions of strategic directions (including the need for a better process of developing strategy for ecologically sustainable agriculture) in more detail.

### *3.1.2 Performance Indicators and Measurement*

To assess and review progress towards goals and targets in any strategy it is important to be able to measure that performance.

Efforts to date in the development and application of performance indicators fall a long way short of what is required. For the most part, indicators cover things like:

- how much money has been spent in each program area
- how many hectares of improved pastures have been established
- how many people attended information sessions
- estimated on-farm productivity improvements flowing from a particular action
- number of plants planted, with information on reason for planting, species, (incl. understory species), provenance, and survival rates over time notably lacking

This approach to performance indicators is not satisfactory, and focuses on actions rather than outcomes. It suggests that the prime reason for developing them has been to improve accountability within government agencies, and to prove that grant funds have been spent. Financial accountability is of course important (ref. to 3.2, below),

but is not the central issue here. The primary reason for performance indicators should surely be to measure the performance of government-funded (or co-funded) initiatives against targets and/or benchmarks.

Irrespective of their validity as indicators, indicators (such as those above) face another problem in that they invariably change from year to year. Hence performance from year to year cannot be measured, and no-one can say whether government programs are improving or not, or getting any closer to their objectives.

Measuring performance towards ecologically sustainable agriculture is a very difficult issue, and is closely dependent on available monitoring resources. For example:

- How do you measure biodiversity decline across Australia's vast farming and pastoral regions? What are the indicator species for each location? What are the causes of species and ecosystem decline in each location?
- How do you measure annual changes in groundwater recharge in salinity-prone regions, allowing for local geology and climate flux, and in a cost-effective way?
- How do you measure the relative efficacy of (for example) programs aimed at improving environmental flows, water quality and habitat for native freshwater flora and fauna?
- How do you measure the various forms of soil degradation, and what benchmarks are appropriate for each area?
- How do you quantify market and non-market externalities, particularly in assessing the relative priority to be assigned to different projects?

Much effort is needed to develop cost-effective performance indicators which measure actual performance relative to objectives and targets. Perhaps more significantly, much effort is required to develop the information systems required to make meaningful assessments against performance indicators.

State of the Environment reporting is something which is in a fairly developmental stage. State of the Environment Reporting is no doubt a comprehensive and reasonably accurate document, but SOE processes generally a number of critical deficiencies which seriously limit their usefulness:

- SOE processes invariably rely on very scant (or low-resolution) data, much of which suffers from significant gaps
- SOE programs are generally hamstrung by resource deficiencies
- SOE studies lack useful baseline data
- SOE studies are often once-only 'snapshots' which fail to monitor changes in key environmental indicators over time
- sometimes there is an ad-hoc approach to selecting environmental indicators
- there are serious limitations on the capacity to draw firm conclusions
- the public has a very limited capacity to access information of any practical relevance to their region

- SOE studies make insufficient use of GIS for data processing, compilation and presentation
- SOE processes fail to transfer information to those who could best make use of it
- SOE agencies are largely unaccountable to the public for the quality or usefulness of the information they produce. Community-based networks and public GIS systems would force SOE agencies to be both more accurate and more comprehensive in the information they produce.
- the scale of SOE reports is often irrelevant or unworkable for detailed regional planning and implementation

It is worth noting that SOE in some form has now become a legislated responsibility of local government in NSW, and to some extent of Catchment and Land Protection Boards in Victoria. The danger is, however, that the conventional “essay-writing” approach to SOE will continue, providing a largely subjective interpretation of scattered data which is incapable of measuring performance and trends over time.

If SOE is to be of any practical use in land and environmental management, it must develop additional characteristics required by land and environment managers. These include:

- different layers of resolution, where local data on a wide range of indicators is collected and collated for interpretation at the property, local, bio-regional and national level
- widespread and co-ordinated community involvement in some areas of data collection at least, provided that sufficient resources are provided to facilitate and co-ordinate this input
- increased effort at collection of environmental data by governments (ie. data which is difficult for the community to collect, or which requires high skill levels in collection and interpretation)
- unrestricted public access to SOE information databases

The integration of effective community-based monitoring programs may well prove essential to the success of more useful and useable SOE and performance monitoring programs. [To this end ACF (together with the Australian Local Government Association) as applied for NHT funding to develop a community-based monitoring program, supported with its own web site.]

At present, however, and until a comprehensive information base is put together and maintained, useful performance indicators and monitoring capacity remain little more than a concept. Furthermore, government assistance programs, most of which are loosely referred to as *environmental programs*, remain almost totally unaccountable.

### **3.2 Allocating Costs and Benefits – Transparency, Accountability and Co-ordination in Government**

Funding under various programs (particularly ‘environmental’ programs), and arrangements for collecting and distributing revenue, are critical the success (or failure) of government policy in working towards ecologically sustainable agriculture.

Many issues are worthy of very detailed discussion here, and many questions need to be answered in detail. In particular:

- how does one justify the varying (and variable) levels of funding for different priorities in land and environmental management
- whether or not, or to what extent, public funds should be used to produce a private gain?
- whether, and to what extent, ‘polluters’ (ie. those who cause or contribute to an environmental problem) should pay, and how does one attribute cause and affect in any case?
- whether, and to what extent, ‘beneficiaries’ (ie. those who benefit from the expenditure) should pay, and who constitutes a beneficiary in any case
- how are priorities in expenditure determined, and what is an acceptable methodology for assigning values, priorities and for making meaningful comparisons between priorities?
- who should pay, and how should they pay?

These questions are central to public accountability and transparency in government policy and administration of funds. However, time constraints prevent them from being addressed in sufficient detail in this submission.

**The attached submissions on water pricing investigate some of these issues in some detail, specifically in relation to irrigation water and the environmental impacts of irrigation. The lack of any rational justification for water infrastructure subsidies in particular is a major on-going concern for ACF.**

**Further discussion of the issues can be found in dryland salinity (refer to section 3.3 of the attached book Fighting Salinity on a Wool Cheque)**

Similar arguments apply to the issue of drought relief to farmers. Given that Australian farmers operate in a drought-prone environment, why should the government provide drought relief? In many ways, drought can be seen as a normal risk of production, and should be addressed via normal insurance avenues, or perhaps through an income equalisation bond system. Ad-hoc and politically motivated payouts in response to natural climatic variability is not helpful in ensuring that Australian agriculture is robust enough to cope with reality.

Similarly, irrigation security is an issue of great concern to many irrigators (particularly for horticulturalists operating with permanent plantings, or graziers with permanent pastures), and hence water agencies find themselves under enormous pressure to deliver water to very high levels of security (particularly in Victoria and SA), at the expense of the environmental needs of rivers and associated ecosystems. While considerable public investment has been sunk into river regulatory structures which improve water supply security, it must also be recognised that, in Australian floodplain river systems, flow variability is literally essential to healthy ecosystem functioning. Improved security of supply to irrigators would require an even greater departure from natural river flow variability. However, other forms of investment security do exist, and include:

- insurance policies (as, for example, hail damage insurance is currently used)
- investing in water futures (ie. purchasing an option on next year's water under temporary markets)
- purchasing additional high security entitlements.

As water markets mature, these options will become more widely available, but in some areas the efforts of water agencies and governments to maximise security (sometimes with disregard for environmental needs) are probably undermining these options, and possibly constitute unfair competition.

ACF is concerned that a significant (or major) proportion of public environmental funds are spent on matters which have little or no importance or relevance for the environment. Rather, (and as alluded to above), the objective of many of these funding programs is evidently to finance works or productivity improvements which help to sustain existing farming operations. (Note again here that sustaining existing forms of production does not equate with ecological sustainability.) In a very real way, environmental funds are being used as production subsidies.

Examples here include:

- pasture improvement subsidies (refer to attachment)
- irrigation drainage subsidies (refer to attachments)
- farm forestry subsidies (here, subsidies are provided to assist farm forestry ventures in competing against subsidised hardwood production from native forests; a case of good money after bad!)

Less clear-cut examples involve the provision of environmental subsidies (for example, erosion control, fencing remnant vegetation, weed control, feral animal control, etc.) where funding agencies have not considered the application of the "polluter pays" principle.

In a discussion paper on water pricing prepared by the NSW Independent Pricing and Regulatory Tribunal, the following principle is recommended that "*consideration should be given to 'polluter pays' before 'beneficiary pays', indicating that those responsible for activities which cause measurable impacts on the resource should be required to pay for the remediation of those impacts*". (p. 76) The Tribunal also recommended that "*where the source of pollution is diffuse and direct attribution to any group is not feasible, a beneficiary pays approach should be used*". The problem is hence one of attributing cause and effect, and even if this approach were taken (which should be the case in our view), there is a considerable danger of it being only very loosely interpreted. Certainly it is easier to assume that polluters cannot be identified, and therefore incur the cost in question on the wider community.

Sensitivity to criticism about the fairness and accountability in some "environmental" programs has led some governments (esp. Victoria) are developing systems of "**multi-criteria analysis**" in an effort to either improve the objectivity of decision-making in allocating funds based on social, economic and environmental criteria, although a cynic could regard it as an effort to better justify existing funding priorities via a complex and largely subjective set of funding criteria and evaluation procedures.

Economic assessment under multi-criteria analysis can be seriously flawed. For example, what would a Catchment Management Committee (CMC) comprising mainly farmers know about tourism or fishing values? Or, how can a CMC assess off-site costs of salinity? What mechanisms are proposed to ensure that the economic assessments involve some degree of rigour? How much weight should be given to economic or productivity improvements as against other perceived benefits? How are *net* benefits assessed? Some important economic considerations (eg. the current or potential tourism value of parks, reserves, rivers, etc) could well be seriously underestimated.

It must also be noted that economic values can only be considered over a timeframe, and must involve the use of a discount rate. Selection of a discount rate, particularly when considering longer-term impacts, is highly problematic.

While social impact is important, ACF perceives many problems in incorporating social priorities (such as regional viability and employment), which go well beyond just local and regional considerations. There are statewide, interstate, national and even international considerations also (eg. Adelaide's water quality). Secondly, the maintenance of a particular industry (eg. dryland sheep grazing in high recharge, high salinity areas) may not be a rational objective, even though it may be "socially desirable" in the view of local people, and it may be appropriate to look at reforming, changing or even dismantling a particular industry when one looks at the total picture. In any case, accounting for employment losses/gains under social criteria represents a serious case of double counting if economic costs/benefits are also counted.

Given these problems, the incorporation of environmental criteria is even more problematic, and suggests that biodiversity conservation priorities are unlikely to be addressed via a multi-criteria analysis unless they have some social or economic benefits. Certainly existing methods for prioritising biodiversity conservation priorities are highly deficient in any case.

Methods of assigning priorities must continue to be refined. However, unless work on land and environmental monitoring and performance indicators is significantly advanced,

Funding methods, and methods of assigning costs and benefits, are literally in their infancy. Issues here include:

- funding from general state and commonwealth government sources, and what these funds should – and shouldn't – be used for
- catchment-based rates on property owners, the basis for such rating (flat rate or property value?), and what these funds should – and shouldn't – be used for
- the use of local government funds and rating powers, and instruments such as rate relief for management and covenanting of areas of private land with high natural values
- measures to ensure certain minimum contributions from landholders in proportion to grant funds
- cost recovery by state government agencies



### **3.3 Discussion of Policy Instruments (Legislation, Community Participation, Property Rights, Taxation & Land-Use Planning, GATT)**

To date in this submission most of the discussion has focussed on government funding, perhaps in recognition of the fact that funding programs have been the major focus of government activity to date. However, other policy instruments exist, all of which have been used to a greater or lesser extent, and with varying levels of success in meeting a mixed range of objectives.

It is not unreasonable too assert that, in developing a strategy for ecologically sustainable land use, the full range of policy instruments involved (including funding) should be canvassed, and the most effective and efficient mix of policy instruments should be put in place and reviewed periodically. For the most part, however, the development and application of these instruments is extremely piecemeal, ad-hoc and un-coordinated, and their full potential is far from being realised.

#### *3.3.1 Legislation*

Currently legislation pertaining to agriculture (or potentially pertaining to agriculture) is very diverse, embracing things like:

- pastoral leases
- water quality-related environmental protection standards (EPA)
- soil conservation
- weeds and pest animals
- taxation
- water resources and river management
- commodity marketing boards (eg. Meat & Livestock Corporation)
- research and development
- local government planning and rating powers
- catchment management committees

In the time available it is difficult to present a considered and comprehensive view on these issues. Note however, that ACF's assessment of the NZ Resource Management Act (albeit a little out-of date) is attached. We believe that the NZ approach, involving the amalgamation of many pieces of legislation into one act, together with a major restructuring of different layers of government, and a policy (rather than procedurally) driven approach, represents a valuable model for Australia.

ACF urges the Commission to consider a review of agricultural, environmental, planning and natural resource management legislation as part of this Inquiry.

#### *3.3.2 Community Participation*

Community participation is a rapidly evolving phenomenon in agricultural land and resource use, and is becoming increasingly formalised via legislation and funding approval status. Community participation is also a critical consideration in a move towards ecological sustainability. Existing models of community participation, together with the legislation, funding programs and support mechanisms (at the state government level) which effective community participation requires, is an important issue for this Inquiry to address.

ACF maintains some serious concerns about these structures and processes. In a nutshell, these *generalised* concerns include:

- lack of accountability and transparency in decision-making
- lack of ecological expertise, a lack of general scientific and economic expertise, and a bias towards expertise towards farm management and land degradation
- bias in membership towards landholders and water users, sometimes prescribed in legislation, and leading to (a potential for) conflicts of interests
- lack of resources, both in terms of information and monitoring resources, and in terms of funds required to implement catchment management strategies
- a bias in CM strategies against funding for biodiversity conservation initiatives, and towards land-based on-farm works
- CMCs have a regional focus, whereas some environmental, resource management and land management issues must be addressed on a much broader scale (eg. river management in the Murray Darling Basin)

ACF recommends that the Commission investigate these issues in some detail.

### 3.3.3 *Property Rights*

Property rights in land and water resources are major concerns for ACF.

Water property rights are discussed in the attached submissions to the NSW Independent Pricing and Regulatory Tribunal.

As alluded to previously, ACF is also concerned about the potential for upgrading tenure of pastoral leases, and considers that the proposed 10 point plan in response to the Wik case would be most inconsistent with the principles of ecological sustainability. Specifically, we are concerned that upgrading pastoral leasehold tenure will:

- enable unsustainable land uses such as broad-scale land clearing, intensive irrigated agriculture, native forest logging and unregulated tourism on an as-of-right basis
- curtail existing controls on land use and management (*such as tree clearing controls in Queensland, which presently only apply to leasehold and not to freehold land*)
- pre-empt and prevent the development of a comprehensive and adequate national reserve system (*as is promised in Federal Government policy*)

- remove Government controls on unsustainable land use, such as periodic review and lease renewal, which currently provide mechanisms to promote ecologically sustainable land management on leasehold pastoral lands
- introduce impediments to the success of regional environmental strategies funded by the Commonwealth Government's National Heritage Trust
- enable non-pastoral land uses to occur throughout the rangelands, thereby introducing new kinds and levels of threats to the ecological integrity and biological diversity of the rangelands
- "reward" leaseholders with freehold title regardless of their previous and current performance in resource management
- reduce flexibility of decision-making in the event of climate change, and further declines in biodiversity
- reduce public access to information about environmental values and the conservation status of land converted to freehold, and increase the occurrence of land speculation
- remove the capacity of governments to act in the public interest by adjusting stocking rates, setting logging rates, requiring land rehabilitation, and re-establishing or conserving wildlife corridors and riparian vegetation
- provide a huge windfall gain for pastoralists in the form of increased security of tenure
- creating a negative financial impact on public expenditure due to the higher costs of achieving conservation outcomes from freehold land
- require massive taxpayer-funded payments to compensate for the extinguishment of native title
- ensure a sub-optimal use of rangelands by granting unrestricted land uses to a minority of the population on a majority of public lands

#### *3.3.4 Taxation*

The attached submission to ABARE Review of Landcare Taxation Incentives provides an indication of ACFs thinking on some taxation issues pertaining to agriculture.

The diesel fuel rebate is discussed in section 2.2.2.

Needless to say, a review of taxation arrangements for agriculture by the Commission is warranted as part of this inquiry.

#### *3.3.5 Land Use Planning*

Land use planning controls have, historically, been only minimally applied to agricultural lands. Major issues here include:

- encroachment of low-density rural residential and "hobby farm" developments into prime agricultural lands, principally through lax and inconsistent subdivision controls, or through a lack of attempts to protect prime lands by directing subdivisions to lesser quality lands.

- lack of requirements for planning permit approvals involving changed (particularly intensive) forms of land use, non-agricultural ventures, and developments which are likely to have an adverse impact on surface and groundwater quality
- lack of requirements to implement remedial works as required (eg. erosion control generally; river frontage fencing, revegetation and erosion control)
- a lack of (or inconsistencies in) controls over the construction and maintenance water infrastructure (eg. dams and retarding basins), drain construction, and levee bank construction), particularly where:
  - dam construction results in reduced water availability in over-stressed river systems (such as the Murray Darling), without allocation of formal water entitlements
  - levee construction prevents flooding in key floodplains and wetlands, and in the process, increases flooding impacts elsewhere and contributes to increased channel erosion
  - drainage of wetlands results in significant loss of wetland habitat, noting also that wetlands generally are now poorly represented in agricultural regions
  - plantations result in reduced surface runoff or reduced groundwater recharge where water resources are already over-stressed
  - drain construction which (i) exacerbates, or alternatively denies, surface water flows on other properties, or which (ii) increases movement of salt, nutrients and/or sediments into rivers and streams
- a lack of conservation protection provisions in planning schemes and zones to protect identified areas of private land with high conservation values, and a corresponding lack of rate relief for covenanted land with high conservation values.

Again, these issues require investigation by the Commission.

### *3.3.6 General Agreement on Tariffs and Trade*

A range of views exist on the GATT within the environment movement. This section focusses on the opportunities presented by GATT in terms of removing agricultural and related infrastructure subsidies internationally, and the responsibility incumbent on the Australian Federal Government to take these up via the GATT.

Of particular interest here is the widespread use of subsidies (and indeed, foreign aid) towards the construction of large dam and associated infrastructure, and associated water price subsidies, primarily aimed at subsidising irrigated agriculture.

Essentially such subsidies undercut Australian horticulture prices, while at the same time causing environmental degradation (and often social upheaval) in the countries concerned.

ACF contends that the need to develop (and over time, refine) a water resource and infrastructure pricing and management policy (based, for example, on the COAG Water Resource Management Policy) be placed on the GATT Agenda by the Commonwealth Government. Such a protocol could cover:

- water pricing
- water infrastructure (cost recovery)
- water allocation (incl allocation to the environment) and management
- water property rights (note ACFs views on water property rights in Attachment 2)
- public consultation and education

Similar issues (ie. other issues raised in this submission) could also be raised in the GATT forum.

Unfortunately, time constraints mean that ACF is not in a position to provide further views on this issue at this time. At this stage, however, it is appropriate to raise the issue for discussion.

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**List of Attachments:**

1. ACF Submission to the NSW Government Pricing Tribunal Review of Pricing of Water Services provided by the Water Administration Ministerial Council
2. ACF 2nd Submission to the NSW Independent Pricing & Regulatory Tribunal Review of Pricing of Water Services provided by the Water Administration Ministerial Council
3. New Zealand Legislates for Sustainable Development – A Brief Review of NZ Resource Management Act (Alexandra et al, ACF, 1994)
4. Fighting Salinity on a Wool Cheque (Fisher, ACF, 1995)
5. ACF Proposals for Commonwealth Policy Options on Halting Native Vegetation Clearing
6. ACF Response to Draft National Strategy for Rangeland Management
7. ACF Submission to ABARE Review of Landcare Taxation Incentives
8. Dead Centre or Living Heart? Choosing a Future for Arid Australia (Ledgar and Stafford Smith, ACF, 1996)
9. Bush Bashing (Alexandra, ACF, 1995)
10. Protecting our Unprotected Lands (Krockenberger and McLean, ACF, 1997)
11. Fish out of Water – The Plight of Native Fish in the Murray Darling Basin (Fisher, ACF, 1996)
12. The Darling: A River Running Out of Time (Alexandra and Fisher, ACF, 1995)
13. Future Directions in Landcare (ACF, 1996)
14. Listening to the Land – Directory of Community Environmental Monitoring Groups in Australia (Alexandra and White, ACF, 1996)