

11 August 2003

Dr Neil Byron
Productivity Commission
Native Vegetation Inquiry
Locked Bag 2
Collins Street East
MELBOURNE VIC 8003

Dear Dr Byron

I am writing in response to the *Impacts of Native Vegetation and Biodiversity Regulations* Issues Paper released by the Productivity Commission for comment in May 2003. Thank you for the opportunity to participate in the Inquiry and the recent visit from yourself and your colleagues.

Queensland Farmers' Federation (QFF) represents more than 18 000 primary producers across the State through 22 member organisations. QFF, on behalf of all primary producers, has a keen interest in the management of Queensland's natural resources including biodiversity and vegetation, and the many legislative and policy frameworks governing such management.

QFF strongly supports and advocates sustainable farming practices, and recognises the need for protection of environmental values through the sustainable use of natural resources. Approximately 87% of Queensland's 1.7 million square kilometres is devoted to the production of food, fibre and foliage and the rural sector currently contributes \$8.5 billion annually to the Queensland economy. QFF and its member organisations support the need for a framework capable of delivering planning certainty to landholders and are committed to ensuring the sustainable use of Queensland's natural resources and the future viability of the rural sector.

QFF's comments on the Paper are attached. Should you require any further information please do not hesitate to contact me on (07) 3017 1333.

Yours sincerely

Brianna Casey
Executive Director

Submission

to

Productivity Commission Impacts of Native Vegetation and Biodiversity Regulations Inquiry

BACKGROUND TO SUBMISSION

Queensland Farmers' Federation (QFF) and its commodity member organisations strongly welcomed the announcement by the Federal Treasurer, Hon Peter Costello in April 2003 that the long-awaited Productivity Commission Inquiry into the impacts of Commonwealth, State and Territory native vegetation and biodiversity regulations was to begin. As evidenced at the CANEGROWERS *Property Rights in Paradise* forum in Cairns held 8-9 April 2003, the Inquiry is of extreme importance to primary producers and rural communities across the country. The announcement indicated very clearly that the Commonwealth Government consider there is merit in examining the effectiveness of the native vegetation and biodiversity regulatory regimes and their impacts on farming practices, productivity, property values and returns and the investment behaviour of landholders.

QFF believes the Inquiry will be very subjective in nature, given the short time frame for which to carry out the Inquiry, the wide range of State and Territory arrangements for native vegetation and biodiversity regulatory regimes that are being examined, as well as the large number of stakeholders with an interest in the Inquiry. QFF believes the Inquiry will provide an important commentary on the regulatory regimes under study; the impacts of their pending introduction, their introduction, and their operational workings. Further, the Inquiry will be an invaluable addition to the ongoing property rights debate and the current uncertainty regarding future vegetation management arrangements in Queensland resulting from the tabling of the Commonwealth/State officials Queensland Land Clearing Proposal to phase out remnant vegetation clearing in the State by 2006.

QFF and its members are strongly committed to integrated natural resource management, and are supportive of a whole-of-catchment, whole-of-government risk-based approach to addressing vegetation and biodiversity management. We support ecologically sustainable development and recognise the need for protection of environmental values through sustainable use of vegetation and other natural resources. To deliver these outcomes, we support the need for a framework capable of delivering planning certainty and developmental opportunities to landholders. Moreover, QFF is committed to ensuring that Queensland's rural sector, which currently contributes \$8.5 billion annually to Queensland economy, remains viable in the future.

Amid the natural resource management reform process of late, it is clear that Queensland's primary producers are struggling to keep up with the raft of natural resource management agendas at local, State and Commonwealth levels. In Queensland natural resource management has evolved in a piecemeal fashion, with vegetation, water, salinity, greenhouse, biodiversity conservation, chemical management and other priorities addressed inconsistently in terms of planning and the subsequent implementation of such planning. Statutory planning processes, licensing, permit systems, third party auditing, self-assessment, regional assessment, State assessment and even Commonwealth assessment have been utilised to varying degrees. If the

reform process is to be effective and result in improved sustainability practices, it is crucial that planning and policy initiatives and implementation processes be devoted to achieving integrated natural resource management outcomes, and that they be devoted to and capable of equally being delivered at the regional, area-wide and a property level. Furthermore, it is essential that approaches taken, whether designed to deliver and coordinate improved agricultural practices on-farm; the setting of high-level policy; or the alignment of policy and initiative to increase coordination, be able to relate and translate to primary production as it happens in the field. QFF cannot overemphasise the importance of planning and implementation approaches providing clear and achievable direction to primary producers - who are the everyday decision makers with respect to land, natural resource and environmental management in rural areas. QFF believes that a 'systems approach' can facilitate and foster the advancement of sustainable primary production, provided the link between policy and initiative and the primary producer and practice is considered central and is exceptionally strong.

QFF's submission intends to present the Commission with a concise yet comprehensive portrayal of the views and concerns QFF and its member organisations have with the current environmental and natural resource management regulatory regime experienced in Queensland. It must be noted that this submission is representative of the collective views and concerns of QFF's member organisations, some of whom will be providing submissions specific to their sector of rural industry. The Commission should view these industry organisation specific submissions first and foremost in order in terms of ascertaining commodity-specific views and concerns.

This submission is divided in two sections. The initial section presents some of the issues the Federation believes are pertinent to the Inquiry, and additionally incorporates a brief description of the Queensland regulatory regime milieu. The second section attempts to provide comment and examples of specific impacts by following the structure of the Issues Paper and addressing some of the range of questions put forward in it. Throughout this latter section, reference to studies, case examples and anecdotes, where possible, is made to support arguments put forward. For the benefit of the Commission, and where possible, QFF has attached a number of the supporting, studies, case examples and landholder anecdotes.

A number of limitations and assumptions underpin this submission. The relative short timeframe to prepare the submission has limited the scope of the response. Whilst every effort has been made to ensure the submission is comprehensive and is representative of the collective views and concerns of QFF's members, the short time frame has limited QFF's ability to liaise with member bodies for additional 'on ground' examples of the impacts of and the efficacy of the regimes under study. Importantly, the possible introduction and the nature of the recently released Commonwealth /State Queensland Land Clearing Proposal, which seeks to phase out remnant vegetation clearing in Queensland by 2006, has not been factored into the response. It is recognised that the proposal, if introduced either in its current form or modified form, will impact markedly on Queensland's vegetation management arrangements, and more so, on landholders across the state. Notwithstanding, the proposal cannot completely be isolated from the equation given the possibility of its introduction and the resultant uncertainty surrounding future remnant vegetation management arrangements. For this reason reference to the proposal in this submission is only from a potential perspective.

The use of Queensland-focused Commonwealth issues, noticeably in relation to the *Environment Protection and Biodiversity Conservation Act 1999*, reflects the Federation's familiarity with the Queensland environment and it is acknowledged that beyond Queensland different perceptions and different impacts exist depending on how the national regulatory regime interacts with respective State and Territory arrangements.

SECTION ONE: PERTINENT ISSUES

Outlined below are a number of pertinent issues QFF believes must be considered when discussing environmental and natural resource management regulatory regimes, including native vegetation and biodiversity regulations. For this reason, QFF believes the Commission must take them into account in responding to the Inquiry. It is recognised that the Inquiry has been set a limited scope, though QFF does feel that the issues must be taken in hand, if the Commission is to adequately and comprehensively report against its Terms of Reference. It must be noted that there are likely to be other issues raised by other stakeholders relevant to their perspective and that those discussed briefly below should not be considered exhaustive.

THE STRUCTURE AND FUNCTION OF AUSTRALIA'S GOVERNMENTS

A central matter that must be flagged in the Inquiry is the structure and responsibility of the Commonwealth, State and Territory, and local governments, the role of the Federal Constitution in determining such structures and functions, the role of the judiciary in interpreting the Constitution, and their impacts on environmental and natural resource management regulatory regimes.

Roles, responsibilities and approaches concerning environmental and natural resource management are varied among these three-tiers of government. For example most National Parks and other protected areas for conservation are declared and managed by the eight State and Territory government nature conservation agencies. The Commonwealth though is also involved with managing protected areas, either single-handedly such as the case with Kakadu and Uluru-Kata Tjuta National Parks or in partnership with State agencies such as the Great Barrier Reef Marine Park and the Australian Alps National Parks. Additionally local government also significantly contributes to Australia's protected area system either directly through land acquisition programs or through administering covenanting programs. Primarily however, responsibility for the selection and management of Australia's protected areas lies with the States and Territories. This example although simple, is indicative of the structure and roles and resultant responsibilities of Australia's Governments have when it comes to environmental, land and natural resource matters.

Generally, the Commonwealth is responsible for the development of national policies, matters of foreign policy relating to the environment and international agreements and conventions, overseeing environmental policies or practices of a State to ensure no significant adverse external effects and the facilitation of a cooperative approach to the development of national environmental standards. States play a less externally focussed role, though notwithstanding in their own right they are a most important player. State and Territory governments have a responsibility for the management of lands within their boundaries and so national policies need their cooperation for their implementation. Increasingly, local governments are being viewed as an ideal framework for the delivery of both State and Commonwealth policies and they themselves have certainly become more active in the environment and natural resource management field particularly over the last five years.

Such partition of responsibilities has been a result of a number of factors including chiefly the nature of the Australia's Constitution and resultant residual powers to govern matters on the environment remaining with the States and Territories, successive high court decisions on the interpretation of the constitution affirming the extension of Commonwealth jurisdiction on the

basis of several heads of power, the most significant of which was the external affairs power, and the Commonwealth's occupancy of the major tax fields.

The *Inter-Governmental Agreement on the Environment* (IGAE) clearly states the Commonwealth is obliged to ensure that international obligations are met in recognition that the constitutional external affairs powers of the Commonwealth provide the Commonwealth with a role it may not otherwise have an explicit constitutional authority. In short, despite States holding the constitutional right to govern on matters of the environment, the Commonwealth through its obligations to international treaties and conventions can and is exerting a considerable amount of influence on the environmental regulatory regimes and policy frameworks experienced nationally, and in the States and Territories. Relevant national and international policies including the *Convention on Biological Diversity*, Australia's *National Strategy for ESD* and *National Strategy for the Conservation of Australia's Biodiversity* contain philosophy and principles that are embedded throughout the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC) and the *Queensland Vegetation Management Act 1999* (VMA).

Emerging as one focal point in the discussion and negotiations concerning future remnant vegetation management arrangements in Queensland is the Commonwealth's desired greenhouse objectives, its obligations the *United Nations Framework Convention on Climate Change* and its commitment to meet the targets of the *Kyoto Protocol* despite the Commonwealth deciding against ratifying the Protocol. Such a focus demonstrates the effect of federalism and the roles and responsibilities of Australia's Governments when it comes to the development and operation of environmental and natural resource policy and legalisation.

THE RAFT OF LAND USE AND LAND MANAGEMENT LEGISLATION

Native vegetation and biodiversity legislation are only one aspect of land use and land management legislation and therefore cannot be viewed in total isolation. It is essential the Inquiry recognise that other land use and land management policy and legislation exist, and the linkages that exist between those and the regulatory regimes under study be acknowledged, described and taken into account when determining efficacy and impacts. In isolation the EPBC and VMA may not disastrously impact on landholders however, together and combined with the myriad of other environment natural resource management focused reforms it is the cumulative impacts that may be the cause of most concern at the grass-roots level.

REGULATORY REGIME CONTEXT

Understanding the operating context of the regulations under study is important in determining their efficacy and the nature and extent of their impacts, both positive and negative. QFF, below, has attempted to briefly outline the operating context of the regulatory regimes focused on by the Inquiry and in doing provide the Commission with QFF's 'view of the world'.

In Queensland, the three chief agencies involved in administration of regulatory regimes in the environmental, natural resource management spheres is the Department of Natural Resources and Mines (DNR&M), the Environmental Protection Agency (EPA) and the Department of Local Government and Planning (DLGP). The key legislation administered by DNR&M (relevant to primary producers) includes the:

- *Forestry Act 1959* (jointly administered with the Minister for Environment (EPA), except to the extent as administered by the Minister for Primary Industries and Rural Communities (DPI)),
- *Land Act 1994*,
- *Land Title Act 1994*,
- *Vegetation Management Act 1999*,
- *Water Act 2000*, and
- *Land and Pest Stock Route Management Act, 2002*

The key legislation administered by the EPA (relevant to primary producers) include the:

- *Environmental Protection Act 1994*,
- *Nature Conservation Act 1992*,
- *Marine Parks Act 1982*,
- *Coastal Protection and Management Act 1995*, and
- *Queensland Heritage Act 1992*.

DLGP legislation pertinent to the Inquiry includes the:

- *Integrated Planning Act 1997 (IPA)*.

The Department of Primary Industries (DPI) is also a noteworthy State Government agency due to its involvement in the management of the State's *Fisheries Act 1994* and a number of Acts related to the primary production sphere. Local governments and their roles in development and planning and use of by laws, for example for the protection of vegetation, are also important parties to the regulation of access to and use of natural resources.

Queensland's native vegetation management framework

QFF considers three State Acts and their subordinate legislation as central to native vegetation regulations focus of the Inquiry, though, it must be recognised that the Acts themselves are only part of a framework designed to manage native vegetation in Queensland.

Queensland's native vegetation management framework comprises legislation, State policies and Regional Vegetation Management Plans (RVMPs). The *VMA* (and the *Vegetation Management Regulation 2000*), makes vegetation clearing on freehold land assessable development requiring approval under the *IPA*. The *Land Act 1994* (and *Land Regulation 1995*) governs vegetation management on leasehold and other State land. The policies, *State Policy for Vegetation Management on Freehold Land* (SPVM) and *Broadscale Tree Clearing Policy for State Lands* include State assessment codes for clearing vegetation are used to assess clearing applications. The 24 Regional Vegetation Management Plans (RVMP) currently under development across the State, the majority of which are almost completed, will contain regional assessment codes that will replace the existing State codes. Additionally, the *Vegetation (Application for Clearing) Act 2003*, enacted just recently that ratified the moratorium on the acceptance of vegetation clearing applications in order to prevent 'panic' clearing during negotiations over the Commonwealth /State Queensland Land Clearing Proposal, is now a part of the framework.

It is important to view Queensland's vegetation management arrangements from a framework perspective rather than viewing the legislation and policy in isolation. The relationship between the *VMA* and *IPA* for instance is complex with the *VMA* not a 'stand alone' piece of legislation, instead relying heavily on *IPA* for the delivery of the purposes under the *VMA*. In a sense, the *VMA* is 'parasitic' in operation to the *IPA*, with most of the substantive framework and offence provisions contained in *IPA*. Discussed briefly below is the relationship between the *VMA* and *IPA*. It must be noted that QFF member organisations and their members predominantly own and manage freehold land and as such QFF is not as familiar with the leasehold vegetation management arrangements under the *Land Act 1994*. For this reason QFF has not discussed leasehold arrangements.

VMA and IPA

The *VMA* is very much a definitional driven piece of legislation and an understanding of the following definitions is essential in understanding how the Act operates:

- freehold land - includes freehold leases under the *Land Act 1994* (eg a grazing homestead freeholding lease),
- clear - remove or destroy vegetation in any way, but does not include the removal of trees as part of forestry practice,
- vegetation - a native tree or plant which is not a grass or mangrove, and
- vegetation clearing offence - relates to key development offence provisions in *IPA*, interpreted with reference to vegetation clearing.

Further, an understanding of the purposes of the Act is essential in understanding how it operates. The purposes of *VMA* is to regulate the clearing of vegetation on freehold land to:

- (a) preserve the following-
 - (i) remnant endangered regional ecosystems,
 - (ii) vegetation in areas of high nature conservation value and areas vulnerable to land degradation, and
- (b) ensure that the clearing does not cause land degradation, and
- (c) maintain or increase biodiversity, and
- (d) maintain ecological processes, and
- (e) allow for ecologically sustainable land use.

Broadly, these purposes are achieved by:

- Creating codes for vegetation clearing that are applicable codes for the assessment of development under the *IPA*'s Integrated Development Assessment System (IDAS), and
- The enforcement of vegetation clearing provisions, which act under the umbrella of the offence provisions set out in *IPA* in Chapter 4, Part 3.

Remnant vegetation clearance is (generally) assessable development

At the outset, it is important to note the *VMA* expressly indicates that an existing lawful use of premises does not in itself permit subsequent development (in this case vegetation clearance).

Amendments to Schedule 8 of *IPA* made the clearing of native vegetation on freehold land operational work and therefore assessable development. Under *IPA*, assessable development requires the lodgment of an application, which is assessed against a ‘code’ and decided using IDAS. Under the *VMA*, the Minister (Natural Resources and Mines) is required to prepare a *State Policy for Vegetation Management* on freehold land for the State which policy must include a code for the clearing of vegetation, and Regional Vegetation Management Plans for regions of the State, which must include a code for clearing. These codes for the clearance of vegetation are then used as the code in IDAS for which the development (vegetation clearance) is assessed against. A crucial feature though, is the *VMA* stipulates that if a RVMP has been prepared for a region, its code is used as the assessment tool and alternatively if there is no RVMP in place, then the specifically identified ‘code’ parts of the SVMP are relevant to the assessment process. Currently the 24 RVMPs are being prepared across Queensland and QFF believes 20 of those Plans are in the final draft stage and are awaiting approval from the Minister. Notwithstanding though, as a result of the tabling of the Commonwealth/State Queensland Land Clearing Proposal, the status of the RVMPs and their role in any future arrangements that unfold is uncertain and a considerable amount of community angst is resulting from the uncertainty surrounding the status of the Plans.

The *VMA* indicates specific situations where the clearing of native vegetation on freehold land does not constitute assessable development under *IPA*. However, despite the exceptions, there remains the capacity for local government to make clearing assessable under their planning scheme or continue to regulate it under a local law. It is essential to note that local government has the capacity to control native vegetation outside the ambit of the *VMA*. The *VMA* expressly preserves a local government’s capacity to pass a law or create a planning instrument on vegetation clearing and that the local law prevails, even if it is inconsistent with any state legislation. The only ‘rule’ is that local government provision or local law cannot conflict with Part 3 of Schedule 8 of *IPA* (Exempt development that may not be made assessable or self assessable development)

In overview, the clearing of native vegetation in the following situations does not constitute assessable development:

- where the clearing is necessary to construct a single residence and associated building or structure,
- where the clearing is outside a designated remnant of concern ecosystem or a remnant endangered ecosystem and is necessary for routine management (eg clearing to establish necessary infrastructure, that is not remnant vegetation),
- where the clearing is necessary for essential management (eg to establish or maintain a firebreak, maintain existing infrastructure, safety reasons), and
- where the clearing is in urban areas that are not in an ecosystem of particular significance, or high conservation value.

Applications to clear native vegetation must be made according to the requirements of *IPA* (that is, a correctly completed application form, prescribed fee, and any additional information to support the application). However, in the case of an application to clear native vegetation, a Property Vegetation Management Plan (PVMP) (covering details of the proposed clearing over the whole property) is an additional and mandatory requirement in an application for a development application involving vegetation clearing. The Property Vegetation Management Plan must provide details of the proposed vegetation clearing and the minimum information to be incorporated in the PVMP includes:

- the location and extent of the area proposed to be cleared,
- a description of the proposed vegetation to be cleared,
- the location, extent and description of any existing land degradation on the property,
- the action proposed to be taken to prevent the proposed clearing contribution to land degradation during and after the clearing,
- the location, extent and description of any remnant of vegetation remaining on the property after the proposed clearing, and
- any proposed rehabilitation or restoration of vegetation on the property.

Offences committed under the VMA

The framework for the enforcement, investigations and offences of vegetation clearing is contained in Part 3 of the VMA. The powers of the investigating officer to enter premises, take samples and obtain information are also outlined in Part 3. However, the bulk of actual offences is created by the interaction between the VMA and IPA, and are found in IPA. The VMA essentially places a vegetation clearing ‘slant’ on existing IPA offences.

For example s4.3.1 of IPA indicates it is an offence to carry out assessable development without a permit. Therefore, to clear native vegetation (which is generally assessable development) without a permit is an offence under IPA. As another example, s4.3.15 of IPA provides for compliance with an enforcement notice. Failure to comply with an enforcement notice pertaining to clearing of native vegetation will render the person liable to prosecution under IPA.

The ‘parasitic’ approach taken by the VMA is reflective of the IPA aim to be a single legal administrative framework for the assessment and approval of all development. However, the potential for local governments to create additional regulations, and the existence of another code (planning scheme based code) against which development is assessed outside the confines of IPA is fragmenting the Act’s operation.

Environment Protection and Biodiversity Conservation Act 1999

Nationally, the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the primary piece of environmental and natural resource management legislation, which provides for Commonwealth interests in environmental matters to be focussed on matters of ‘national environmental significance’ (NES). Of particular relevance to primary producers in Queensland has been the listing of nationally threatened species and ecological communities. Chiefly the listing of *Brigalow (Acacia harpophylla dominant and co-dominant)*, and *Bluegrass (Dichanthium spp.) dominant grasslands of the Brigalow Belt Bioregions (North and South)* as endangered ecological communities in 2001 have been the most high profile ecological community listings affecting Queensland producers. A number of other communities recently listed that occur and potentially occur in Queensland are *Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions*¹, *Grassy White Box Woodlands, Mabi Forest (Complex Notophyll Vine Forest 5b)*, and *the community of native species dependent on natural discharge of groundwater from the Great Artesian Basin*. Additionally, numerous

¹ Nandedwar Bioregion is not in Queensland

nationally listed threatened flora and fauna occur in Queensland and the State is home to an array of World Heritage Areas, including the high profile Wet Tropics Area and Great Barrier Reef, and numerous Ramsar wetlands such as Boondall Wetlands and Currawinya Lakes. Because Queensland is home to a wide array and numerous matters of national environmental significance, the State is 'trigger rich'.

PROPERTY VALUATION

Valuation is the process of estimating the monetary worth of individual properties. It can be carried out for a range of public or private purposes by a range of methods legitimately yielding quite different numerical results. In determining if there has been any impact on property values as a result of the constraints of the *VMA*, Queensland's valuation system must be taken into account. The basis of Queensland's annual valuation system is currently unimproved value assessed on highest and best use and generally in the current marketplace this results in the value of cleared land tending to be greater than that of uncleared land. Further, the annual valuation conducted is a measure of comparisons, one property against another, and is conducted solely to provide an orderly base for the levying of rates, land taxes and state lease rentals. Whilst the Queensland Government initiated yet *another* review of the State's statutory valuation system in 2001, as announced earlier this year, the review did not reach a consensus position, and as such, the current framework remains.

All landholders in Queensland have a limited statutory responsibility to exercise a duty of care² by managing in an ecological sustainable manner. Ecological sustainable management serves the public interest as well as the landholder's private interest. Where such management is in the public interest, especially, but not solely, where this is at the expense of the landholder's private interest, the actions should and must attract an incentive or a form of adjustment if the landholder's private interests have been encroached upon significantly. The inherent characteristic of property valuation, based on market interpretation is in recognition of the private interest. Within that process though there is no mechanism for identifying and valuing public interest and this is a primary source of much of the antagonism experienced in the debate on public good conservation, and the recompense of any adjustment to landholders who have been required to deliver public good outcomes at the expense of their own interests.

HISTORICAL FACTORS

Land clearing is an established part of the traditional Queensland pastoralist farming system. The Inquiry must adequately examine the social impacts resulting from the provisions of *VMA* and recognise that there are historical factors that have shaped the social perspective and farming systems that have evolved in Queensland. For instance until recent times the clearing of land was requirement under the *Land Act* 1994 as a part of lease conditions.

Whilst ongoing clearing may be of extreme importance to pastoralists and graziers, land clearing practices for the generally more intensive non-pastoral farming industries (the majority of QFF membership) is primarily associated with the establishment of a land use such as cropping or orchard production. Subtle differences between the roles of land clearing, both presently and in the past within property management regimes of different agricultural industries must be considered in the Inquiry.

² See *Environmental Protection Act* 1994 and *Land Act* 1994

UNCERTAINTY REGARDING FUTURE VEGETATION MANAGEMENT ARRANGEMENTS IN QUEENSLAND

In mid May 2003, the Qld Government announced an immediate moratorium on the issuing of new vegetation clearing permits. For those primary producers who had intended to undertake future clearing, but had not yet lodged a permit to clear for assessment, this meant an overnight moratorium on remnant clearing. Just under a week later, the Commonwealth Government released a joint Commonwealth/State officials Queensland Land Clearing proposal to cease remnant vegetation clearing in Queensland by 2006 with a phased reduction in broad-acre clearing under a transitional cap; and in lieu of the development opportunities forgone by landholders as a result of the introduction of the proposal, the proposal included a \$150m assistance package. As a result of the tabling of the proposal, there is massive uncertainty surrounding the future of vegetation management arrangements in Queensland. QFF is currently engaged in high-level discussions with the State and Commonwealth Governments on this matter, and believes a more equitable, and arguably more effective, framework to deliver improved biodiversity and greenhouse outcomes is achievable.

SECTION TWO: - RESPONSE TO ISSUES PAPER

IMPACTS ON LANDHOLDERS AND REGIONAL COMMUNITIES

Negative Impacts on landholders

It is difficult to determine the major impacts on agricultural practices and production, especially any long-term impacts given the *EPBC* and *VMA* are comparatively new pieces of legislation. Further, it is difficult to determine the impacts on individual producers and growers compared to that of industries, and the combined impacts of the regimes with other environmental and natural resource management reform agendas, such as agendas associated with water use and allocation.

QFF believes there are a number of negative impacts on landholders resulting from the regulatory regimes under study. Some impacts are considered to be exclusively relating to the *VMA* and *EPBC* and others are considered to be cumulative impacts resulting from the raft of land use and land management legislation. In overview these negative impacts are considered to be:

- increased administrative burden on landholders,
- interruption to staged farm development and loss of potential productivity,
- increasing cost of regulatory compliance,
- community unrest and angst resulting from uncertainty of affect, and
- decreased property values.

Administrative Burden

Since the enactment of the *VMA* in September 2000, Queensland landholders risk prosecution if they do not follow policies, procedures, protocols and procedures under the Act when clearing native vegetation. Prior to the moratorium on the further issuing of permits to clear under the Act, landholders who successfully obtained a clearing permit were likely to be advised in the letter of acknowledgement from the Department of Natural Resources and Mines that they should check that the proposed clearing does not contravene other legislation including,

- *Nature Conservation Act 1992*
- Local laws made under the *Local Government Act 1993*
- *Environmental Protection Act 1994*
- *Queensland Heritage Act 1992*
- *Cultural Record (Landscapes Queensland and Queensland Estate) Act 1987*
- *Soil Conservation Act 1986*
- *Water Resources Act 1989*
- *Water Act 2000*
- *Beach Protection Act 1968*
- *Coastal Protection and Management Act 1995*

Missing from the list and of particular relevance to the sugar industry and QFF member organisation CANEGROWERS is the *Fisheries Act 1994*, which potentially impacts on the on

farm management activities of approximately 700 canegrowers with farms adjacent to estuarine areas. Under the *Fisheries Act 1994*, all marine plants are protected and this includes all plants growing in or adjacent to fish habitat. Human constructed drains on cane farms are considered as important fish habitat by the Department of Primary Industries (DPI) Fisheries group and as a consequence a cane grower mowing a headland that contains salt couch or repairing an on farm drain that contains native hibiscus risks prosecution. To overcome the need to apply for individual permits every time a cane grower needed to undertake on farm drainage maintenance works, CANEGROWERS and DPI Fisheries developed a *Fish Habitat Code of Practice* where CANEGROWERS district offices hold the necessary permits on behalf of accredited growers on a mill area basis.

Another example in the sugar industry of the increased administrative burden on landholders and industry is the need for permits to control ground and climbing rats in cane farms. Because the rats are native species they are protected under the *Nature Conservation Act 1992*. Damage Mitigation Permits are required from the Queensland National Parks and Wildlife Service in order for the rats to be controlled. Like the permits under the *Fisheries Act 1994*, Damage Mitigation Permits are held on behalf of growers on a mill area basis in an attempt to decrease the administrative burden on individual growers.

The administrative burden in jumping through the many approval 'hoops' is compounded by the lack of coordination between the number of government agencies involved in governing environmental and natural resource management legislation. Liaising across a number of government agencies where landholders often only receive 'one side of the story' and at times conflicting advice makes obtaining an approval an arduous task. Even within Departments, lack of coordination has resulted in much frustration and anxiety for landholders. **Attachment 1**, an excerpt from the CANEGROWERS Bundaberg submission to the Productivity Commission, demonstrates the considerable angst, enormous intangible cost and direct and unnecessary expense to two Bundaberg cane growing families resulting from the lack of harmonisation within the Department of Primary Industries.

Inevitably, there will be trade-offs concerning the primary management of a particular area on farm or resource in accordance with the most desired outcome. Trade-offs of such nature are a result of an issues-based approach to the management of resources where one desired outcome, for example the protection of vegetation for biodiversity 'wins out' at the expense of another outcome, for example protection of vegetation for its role in carbon sequestration. The differences in issues-specific management regimes employed to deliver different desired outcomes can create on-ground conflict. The meshing of a series of often competing and incompatible desired management outcomes at not only at a policy level, but policy implementation level as well is needed to minimise this conflict. Although 'systems thinking' approaches are becoming the popular train of thought in the policy sphere, the concept has not reached the administration of or implementation of policy and until such a time, if it comes about, Government will continue to struggle to deliver a multiplicity of differing and often, spatially mutually inclusive, management outcomes. On ground, which law is laid down?

While the complexity of State-based legislation is considerable, the Commonwealth Government effectively further increased the administrative load on landholders when it introduced the *EBPC*. One of the first groups of landholders in Queensland to be significantly impacted by the Act were landholders in regions featuring Brigalow and bluegrass communities when those ecological communities were listed as endangered on the Act's list of threatened ecological communities. Landholders with those communities on-farm are now faced with considerable responsibilities in terms of self-assessment of whether Commonwealth referral is required for a proposed 'action'.

Whilst this may be relatively straightforward for some ‘actions’ and their corresponding triggers, for agricultural activities and the nationally threatened species and ecological communities trigger, the Guidelines on Significance has not sufficiently alleviated the ambiguity surrounding what constitutes an ‘action’ and significant impact and hence when a referral needs to be made.

It should also be mentioned that at the time of listing Brigalow and bluegrass communities, there was no advice at all to landholders seeking to manage those communities. There was in fact significant legislative contradiction, in that under the VMA, clearing regrowth Brigalow (providing the regrowth had not been declared as ‘high nature conservation value’ or contributing towards avoiding land degradation) was, and remains legal, yet the Commonwealth did not distinguish between remnant and non-remnant Brigalow, meaning that ALL Brigalow must be protected. This effectively meant that landholders could legally clear under State legislation, yet still trigger Commonwealth legislation. It took a massive 12 months for this situation to be addressed by the Commonwealth.

Since the *Booth -v- Bosworth* (2000) case there has been considerable confusion in the North Queensland lychee industry in terms of what farmers can and cannot do to protect their orchards and crops, and what action constitutes a ‘significant impact’. Whilst there have been guidelines released covering the Spectacled Flying-fox, this confusion has not been eased. As an indication that even the Commonwealth Environment Minister and Environment Australia are finding it difficult to determine what exactly constitutes a ‘significant impact’ in relation to Flying-foxes, an excerpt from the Environment Australia website has been attached (**Attachment 2**).

Interrupted staged farm development and loss of potential productivity

QFF considers a major impact from the introduction of the VMA has been the impact on farm development. The introduction of regimes and resulting restrictions on clearing has meant landholders who are staging the development of their properties and hence businesses have been interrupted. Consequently, loss of potential productivity associated with the planned/possible expansion has occurred and depending on the extent of that lost productivity properties may have been rendered unviable. It is the producers and growers that have planned a staged development of their properties and have invested and borrowed heavily in order to do so are those that have been impacted the greatest, financially by the constraints imposed by the VMA. This is because farm businesses that have borrowed heavily to purchase properties (and invested in infrastructure, equipment, water allocations etc) would have done so at a price reflecting the expectation of future property development and were relying on the future increases in productivity and profitability to service the loans and outlay. As it is unknown how many properties are in this situation it will be difficult to determine exact loss of productivity unless a case-by-case basis was used and for those cases indicative of average impact be extrapolated to form an ‘overall picture’.

Attachment 3 details the circumstances faced by a Bundaberg cane grower whose plans to build a dam to store an allocation of water to improve his property’s water use efficiency and to enable him to diversify from cane into vegetables were unable to proceed because he could not clear protected native vegetation to build the dam. Further, the grower’s circumstances illustrate the competing nature of differing sets of desired outcomes.

It is expected that the Commission, in determining lost productivity, will employ a comparison methodology where the projected earnings of areas that may have been cleared (in the absence of the VMA based on past clearing rates) to expand production are determined and then compared to

current earnings experienced and projected earnings based on current constraints. The estimate of lost productivity will be difficult to determine, considering there are many factors to be taken into account. Chiefly, these main factors will be the value and returns of possible post clearing land uses and the timing of staged farm development. The loss of productivity must also be weighed up against the costs of clearing and on ongoing management of regrowth and the cost of the maintenance of areas protected under the *VMA*. The timing and constraints on the timing of possible clearing both in scenarios where the *VMA* is present and not present must be factored into the equation -constraints including farm businesses levels of investment in land, capital and equipment, limited cash for farmers to invest in expansion, limits on the availability of farm labour and management skills, seasonal conditions and market outlook. In calculating the value of lost productivity it is necessary to factor in that possible future management arrangements on land that may currently be considered uneconomic to clear may yield higher rates of return and become economically viable to clear and farm in the future due to advances in knowledge and technology.

It is essential that the many assumptions used by the Inquiry to determine these values be transparent, as the assumptions used will ultimately determine what final value of lost productivity is ascertained. The disparity between the amounts calculated in the 1999 DPI Report and the ABARE/BRS report underpinning the Queensland Land Clearing Proposal is almost solely due to the different assumptions used.

CANEGOWERS Mackay undertook a study of the potential economic impact of the *VMA* (**Attachment 4**) on the local sugar industry examining the impact on farm and local industry development. The study estimated that 9 811 hectares of potential cane land cannot be developed because it is identified as 'endangered or 'of concern' regional ecosystems. Based on the average sugar price over 5 years to 2001 the study estimated that this represented a direct potential lost turnover of \$26.7 million. The impact on individual canegrowers has been significant, in particular as a consequence of banks devaluing land classified as an endangered ecosystem. The loss of equity in farm businesses, at a time when world sugar prices and crop production has been low, has sent some growers bankrupt.

It is important to note that the study was carried out when there was uncertainty regarding if the *VMA* would or would not protect 'of concern' regional ecosystems on freehold land, and that amidst this uncertainty, the study assumed that the *VMA* would protect 'of concern' classified vegetation. At present, clearing of 'of concern' regional ecosystems is subject a number of restrictions through the RVMP process. Nevertheless, the study investigated impacts in accordance with regional ecosystem classifications and as such was able to estimate the potential lost turnover from the protection of 'endangered' vegetation, being of \$15.7 million.

Increasing Cost Of Regulatory Compliance

The multitude of government regulatory regimes are impacting on agribusiness by creating a legislatively-induced cost price squeeze which has the potential to have a major impact on the Queensland economy. Unfortunately, in many cases, the government is unaware of this progressive cumulative impact because of the lack of coordination and cooperation within government, both within the agencies at any one level of Government, as well as between the three-tiers of Government. Research conducted in 1990 indicated that the cost of compliance expressed as a percentage of the total cost of running a small business was approximately 30%. In the interim period, all three tiers of Government have significantly increased their regulatory burden on business and so now the cost of compliance is probably much higher.

Some QFF member bodies have reported significant declines in farms in their sector in recent years and the major reasons cited for landholders exiting agriculture are the impact of Government policies and disillusionment with the way all levels of Government are treating them. These reports are supported by the latest Australian Bureau of Statistics figures that indicate farming families in Australia have declined by 22% between 1986 and 2001. In the same period, farmers aged less than 35 years of age have declined from 19% to 12%. These sizeable declines, especially in the numbers of farmers under 35 years of age, are of concern for the future of agriculture.

The gradual increase in cost of compliance, not only the financial cost but time as well, is an increasing the load on farm businesses - at the expense of time and finances which could be more efficiently directed towards the productivity of their business.

Unrest and community angst

The 'panic' clearing associated with the impending introduction of the VMA in 1999 is a prime example of the manifestation of community unrest and anguish resulting from the fear of the unknown and perceived forced change. Whilst personal and emotional costs are extremely difficult to quantify, increased levels of stress, family tension and anxiety due to the uncertainty, particularly associated with the inability to proceed with staged development plans and resultant economic pressures has and is continuing to strain rural families. Further, frustration and anger directed towards government is increasing and is contributing to deteriorating relationships between landholders and government employees such field based extension staff. This frustration and anger is being fuelled by distrust and lack of confidence. It is unfortunate, but understandable, that this frustration and anger is directed at 'Government' in general – there is no distinction between the three tiers.

Impact on property values

Exact impact on individual properties and hence an aggregate estimation of devalued land is virtually impossible. Many factors influence the market value of land, though QFF believes that some devaluing of property has occurred primarily relating to lost and/or reduced opportunity for landholders to expand production. Land values generally reflect the capitalised value of the expected stream of future profits from resource use and in the case of land clearing, the extent to which any future increase in profitability arising from farm development is factored into the property value depends critically on both the expected increase in productivity that possible clearing could generate and the expected timing of clearing. The latter is especially important if the farm development occurs over several years i.e. development is staged.

Government impacts to mitigate negative impacts

Whilst still an uncertainty, the provision of the financial assistance with the Commonwealth/State Queensland Land Clearing Proposal is symptomatic of the effort of the State and Commonwealth Governments to mitigate the negative impacts of tree clearing limitations. However, such an effort is only to mitigate the adverse impacts from the introduction of the proposed new arrangements, not the provisions of the VMA and further restrictions through the RVMP process. Hence, the financial assistance is not payment for recompense but payment for adjustment. Such

an approach lacks equity, as it does not enable all landholders affected by the *VMA* to receive assistance. The proposal only provides assistance to landholders whose development opportunities are forgone as a result of the cessation of remnant broad scale land clearing. Only landholders with the opportunity to clear remnant vegetation under the existing provisions of the *VMA* - that is freehold landholders with 'of concern' and 'not of concern' remnant vegetation and leasehold landholders with 'not of concern' remnant vegetation would be assisted. The proposal does not recognise nor provide assistance to those freehold landholders with 'endangered' remnant vegetation, or 'of concern' and 'not of concern' vegetation protected through the regional process, and leasehold landholders with 'endangered' and 'of concern' remnant vegetation, who have already had to comply with the *VMA*.

Should this proposal go ahead as planned, a massive perverse incentive to adopt nothing more than the 'lowest common denominator' will have taken place. Those Regional Vegetation Management Committees who have recommended far higher levels of protection than those legislatively required by the *VMA* have all argued that the Plans would fail to meet their objectives without an adequate financial assistance package. Indeed, QFF understands most RVMPs contain a clause along these lines. If the assistance under the new proposal is only to adjust to the new arrangements – i.e. above and beyond what has already been achieved (or will be achieved) through the RVMP process – those groups who protected only what was legislatively required under the Act will be financially rewarded, and those who protected as much vegetation as possible will be ignored.

Impacts on non-landholders and regional communities

The reduced ability to clear remnant vegetation under the *VMA* has resulted in reduced business opportunities for land clearing and related industries, such as a reduction in employment in areas such as machinery sales and maintenance. Additionally, the opportunity for on-farm employment associated with clearing and other development activities, such as earthworks for laser levelling, ring tank construction etc may be reduced. This reduced expenditure in these industries may have impacts that are likely to flow through and affect populations living in towns and the services they provide, including landholders and as a result there may be reduced opportunities for off-property work for landholders and their families.

Much of the communities and areas affected by the *VMA* are rural and regional areas. These areas are generally experiencing negative population growth and are considered to be economically and socially disadvantaged and as such are considered less resilient to the change brought about by the *VMA*. It is necessary for the Commission to examine such social and regional flow on impacts in determining the impacts of the regulatory regimes under study, particularly the impacts of the *VMA*.

Too often the social side of the triple bottom line equation is neglected and overlooked in favour of the environmental and economic sides. Although in recent times there has been a move to strengthen and integrate social sciences with technical sciences to provide sufficient foundation for the building of sustainable rural communities, clearly much more effort and understanding is needed in this area. Many social forces emerging from human values, norms, traditions, and perceptions, and collectively community dynamics and their characteristics have unconsciously shaped resource use and resource management in Australia.

EFFICIENCY AND EFFECTIVENESS OF ENVIRONMENTAL REGIMES

In essence, the introduction of the *VMA* resulted in areas of land to be ‘panic’ cleared as growers and producers thought that their ability to clear land in the future would be lost and hence those who had no short term plans to clear decided they had no option but to clear - a ‘use it or lose it’ mentality. The accelerated clearing was one such perverse outcome that had occurred resulting from the impending introduction of the *VMA*. Another perverse outcome relates to the confusion surrounding the definition of regrowth and when regrowth transitions to remnant vegetation. In extreme examples, growers and producers, in order to ensure they are able to clear regrowth before it reaches remnant vegetation by definition under the Act, are re-clearing areas of regrowth at a very early stage to avoid the change in status. Shortened cycles of clearing and re-clearing may not enable enhanced greenhouse objectives to occur, as the regrowth would have reduced periods of carbon sequestration and increased incidences of the release of carbon coinciding with the more frequent clearing.

Urban clearing is exempt on freehold land except where the vegetation is mapped as ‘endangered’ regional ecosystem or in an area declared of high nature conservation value. Generally, local authorities are responsible for urban clearing by residual default and if a local government has made a local law to regulate vegetation clearing and/or in their planning scheme has made vegetation clearing assessable development (can be remnant and/or regrowth vegetation as local government are not constrained by the exemptions in Part 1 Section 3A of Schedule 8) then only does vegetation clearing in an urban circumstance become regulated. Aside from the potential myriad of issues arising from the interaction of *IPA* and the *VMA* and the possible raft of differing local government planning scheme provisions and by laws in an urban clearing context a situation where a two-tiered approach to vegetation clearance under the *VMA*-urban and non-urban - has resulted. At the very least, QFF considers this two-tiered approach as inequitable.

The ‘selling’ of the regimes to growers and producers has not been ideal and is considered to be one of the major downfalls of the roll out of the regimes, particularly the *VMA*. Whilst information dissemination has been somewhat passable concerning landholders obligations and requirements under the regimes, the ‘why’ factor underpinning such obligations and requirements has not adequately been ‘sold’ nor has adequate time been given to warm to the concept of biodiversity conservation. This centres on the emphasis on nature conservation at the expense of production, rather than an emphasis on balancing nature conservation and production.

The information systems, knowledge bases and decision-making processes underpinning the regimes have lacked rigour, tended to be exclusive and with the exception of the decision-making processes under the *EPBC* have lacked transparency. QFF is supportive of the transparent decision-making process of the *EBPC*, particularly the posting of referrals, refused referrals, approvals etc on a web based information system for public access.

As a last remark concerning the efficacy of the regulatory regimes it is envisaged the Commission will design a set of transparent criteria to measure the their efficiency and effectiveness.

ADEQUACY OF ASSESSMENTS OF ECONOMIC AND SOCIAL IMPACTS

The lack of accurate, in depth assessment of the social and economic impacts of the regulatory regimes, particularly the *VMA* has been profound. In the development of the *VMA*, the lead up to

the impending introduction of the Act, and its operational workings, there has been no assessment of the likely economic and social impacts on individuals or regional and rural communities.

In relation to the *EPBC*, QFF has been encouraged by advice received from Environment Australia, indicating that whilst the Threatened Species Scientific Committee (TSSC), in assessing nominations under the Act, is unable to take social or economic considerations into account, any information on such issues could provide important background information for the Minister during consideration of activities requiring approval under the Act. However, despite this creating an avenue to provide socio-economic advice, QFF maintains that a Socio-Economic Committee of the same Ministerial status as the TSSC must be established. Without adequate provision for equal consideration of all aspects of the 'triple bottom line', the Act will continue to fail in meeting its primary objective of promoting 'ecologically sustainable development'. Furthermore, the decision to allow background socio-economic advice, as QFF understands, only relates to applications to the Minister seeking approval for individual 'referred actions' that may potentially impact on a listing under the Act. Thus, there is still no avenue for socio-economic considerations in the nomination of a listing.

TRANSPARENCY AND COMMUNITY CONSULTATION

Transparency in decision-making is vital if producers and growers are to have confidence in decisions being made, and effective community consultation and participation is required for 'grass roots' to be engaged. For this effective engagement though not just consultation but participation needs to occur. Consultation usually refers to the informing of a landholder or community of the decision-making outcomes, usually at the end and can be considered as the sharing of information but not necessarily the sharing of power. Participation involves the landholder or community in the process and thereby promotes ownership over the outcomes, in recognition of the fact that it is landholders and the community who have the long-term responsibility for natural resource management and have to 'live' with the outcomes of the decisions.

The level of consultation and participation, through the regional vegetation management planning process is reflective of the recognition of the need for community involvement in decision-making processes. QFF is very supportive of the involvement of stakeholders in the RVMP process, though such a wide cross section of stakeholders has made it difficult for consensus on decisions to be reached. Time is an important factor to take into an account in the decision making process as time is needed for relationships to build and the exchanges of perceptions, knowledge and ideas and to 'break down barriers'. The notion of consensus too assumes that all points of views can be satisfied, though in reality this is not the case.

At the Commonwealth level, there has been a little effort devoted to ensure the decision making process under the Act is transparent, particularly because under the Act there are a number of provisions governing a process to ensure nominations and referrals are made available to the public for comment, including the public release of results of referrals. The posting of this information has enabled a fairly high level of transparency to occur although the sheer amount of information is very overwhelming and developing an understanding of the Act and the Act's processes is virtually a full time position. From a producer's perspective, the amount of knowledge required for them to determine if an action they propose to undertake constitutes a significant impact and the referral lodgement process is daunting, though the establishment of the EPBC Information Officer based with the National Farmers' Federation has assisted in clarifying the process and has provided useful advice to producers and growers.

CONSISTENCY BETWEEN COMMONWEALTH AND STATE/TERRITORY REGIMES

Producers and growers, in order to determine what actions are lawful in the undertaking of the management of their properties, must negotiate the maze of environmental and natural resource management legislation and policy, and the interpretation of the many different requirements require considerable advice. Inconsistencies and duplications between the Queensland and Commonwealth regimes have further complicated the negotiation of the legislative maze.

A key priority of the *EPBC* during its first year was to increase inter-governmental cooperation and reduce duplication. Achievement of this priority to date has been extremely slow and the draft status of the bilateral agreement between Queensland and the Commonwealth on approval processes is indicative of the difficulty in overcoming the inconsistencies and duplications. As a prime example of the inconsistency between regimes, until advice was provided by Environment Australia one year after the listing of Brigalow as a threatened ecological community, clearing of regrowth Brigalow was legal under the *VMA* but illegal under the *EPBC*. This discrepancy promulgated a great deal of confusion and uncertainty, inhibiting the planning and application of sound land management practices throughout Queensland's Brigalow region. Another example, the confusion surrounding the legal status of State Damage Mitigation Permits issued under the Queensland *Nature Conservation Act 1992* following the Flying Fox Case further demonstrated the significant inter-governmental inconsistencies.

In Queensland the Brigalow ecological community that has been listed under the *EPBC* is defined by reference to sixteen regional ecosystems, all of which are classified endangered under the *VMA*. The creation of such a corresponding measures has assisted in overcoming discrepancies between regimes by enabling Queensland Brigalow landholder's to determine what exactly constitutes *Brigalow (Acacia harpophylla dominant and co-dominant on their properties - the on ground trigger for referral is known. Additionally Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions³, and Mabi Forest (Complex Notophyll Vine Forest 5b)*, are defined in reference to regional ecosystems classified under the *VMA*. However, *Grassy White Box Woodlands* has not been defined in reference to any corresponding Queensland measures. Although QFF understands this ecological community is, in its undisturbed state extremely rare (less than 400ha intact) and exists in News South Wales, modelling of past extent has indicated the community may potentially be found in southern Queensland in the New England Tablelands bioregion. In Queensland how can landholders determine they may have and/or detect this community on their properties?

Another area that may present inconsistencies and replication of effort is the listing of numerous species both under the *EPBC* and Queensland *Nature Conservation Act 1992* such as the Mary River Tortoise (*Elusor macrurus*), listed as Vulnerable under the *Nature Conservation Act 1992*, and Endangered under the *EPBC*. Whilst it is recognised that the scale and extent of the species range has been used to determine if the listing on the State and Commonwealth registers, the dual listing poses extra complexities when it comes to the management of the species, especially given the different emphasis caused by the different levels of classification. The development of recovery plans, threat abatement plans and so forth for the species may take different priority under the different jurisdiction in accordance with the level of classification and the need for adequate communication across jurisdictions is required to ensure duplication is minimised. Duplication issues are also exemplified by the occurrence of a species across a number of States/Territories on top of the Commonwealth listing (vulnerable) such as the Brush-tailed Rock

³ Nandedwar Bioregion is not in Queensland

Wallaby (*Petrogale penicillata*), which is found in Queensland (listed as vulnerable), New South Wales, Australian Capital Territory and Victoria.

CLOSING COMMENTS

Whilst QFF could have spent considerable resources and times on assessing the efficacy and impacts of the regimes under study, it has not been possible simply because of the immense undertaking the task would have been. QFF wishes to continue to be involved in the Inquiry and it is envisaged that QFF and member bodies will be providing further input into the Inquiry as it advances. QFF would welcome any feedback on this submission and should the Commission have any further enquires QFF would be more than happy to assist.

ATTACHMENTS

Attachment 1: - Expert from the CANEGROWERS Bundaberg submission to the Productivity Commission.

Attachment 2: - Excerpt from the Environment Australia website

Source: -

<http://www.ea.gov.au/biodiversity/threatened/guidelines/spectacledflyingfox/index.html> (Accessed 16 July 2003)

Attachment 3: - Typed copy of correspondence faxed to QFF from Mr A. Read, a Bundaberg cane grower.

Attachment 4: - Burn Ashburner (2001), *Economic Impact of the Vegetation Management Act 1999 on the Mackay Sugar Region*, Unpublished Report.

Source: - CANEGROWERS

ATTACHMENT 1

WA & D Fritz and G & PM Shepherd

Mr and Mrs Fritz and Mr & Mrs Shepherd are cane farmers in the Elliott Heads-Riverview area of Bundaberg and are members of CANEGROWERS.

...The Fritz's and Shepherd's share a common boundary and use bore hole pumps to extract water from the underground aquifer. Over a period of time the aquifer in the area has had problems with seawater intrusion and they have been placed under severe water restrictions for the last ten years.

In 1995 D.P.I Water Resources were investigating the feasibility of bringing surface water to the area and identified an area between the Fritz's and Shepherds properties as a potential storage area. Whilst the storage capacity was insufficient for DPI Water Resources purposes, the growers were told that it would be an ideal area for them to build water storage for their own use and were advised that they should do something for themselves.

They decided to wait and see what the proposed surface water package could do for them and in early 2001 they were told that the proposed rescue package was no longer a D.P.I project.

In their words

"...we were becoming desperate to get some water to help us grow a decent crop of sugarcane. We decided to go ahead and construct a wall across a gully which is situated between our properties on Freehold land. We contacted a Contractor for suggestions. The Contractor suggested the top-over weir type of construction as it could act as a roadway between our properties, and could also act as a chemical and fertilizer trap. The Contractor advised us to go to D.P.I Water to see what permits were needed for the project. We were also told to check the E.P.A land-clearing map to see if any permits were necessary to clear the area for construction of the wall. We contacted D.P.I Water and we were told that no permit was necessary as the structure was not eight meters high and there was no running water. The land clearing map showed the area was in white, we were told that no permit was necessary. We went ahead and constructed the wall to D.P.I specifications in the area D.P.I Water resources identified and suggested.

Approximately a week after the wall was built, we were contacted by D.P.I Fisheries and informed that they were acting on a complaint from a Riverview resident about the construction and we were told by the Inspectors that we had interfered with a fish habitat and destroyed marine plants in a tidal area and that we would have to restore the area back to where the fresh water and tidal water can meet and let the fish travel upstream and downstream. "

On the 8th of May 2001 the Department of Primary Industries issued a Restoration Notice

Mr & Mrs Shepherd and Mr and Mrs Fritz issued a Notice of Appeal against the Restoration Notice and after a series of postponements an appeal hearing in the Fisheries Tribunal was set down for 18th September 2002. The Fisheries Tribunal determined that it was unable to hear the appeal as the successful appeal to set aside the Restoration Notice would be deemed to be de facto approval of a Marine Plants application and recommended that the appellants make a retrospective application for Marine Plant Removal and to undertake Waterway Barrier Works. In the event that the retrospectively considered applications were refused the Tribunal could then hear all aspects simultaneously.

Mr Fritz advised that “...After we applied for a permit, for which we paid \$247.00, we received a letter stating that we would have to pay \$2500.00 assessment fee for them to do another assessment of the area. We thought this was an exorbitant amount as they had all the information they needed about the area. The fee of \$2500.00 was paid on 23rd January 2003. On the 30th January 2003 we received a letter dated 28th January refusing the permit.”

DPI refused the application for removal of marine plants and also expressed the opinion that other alternatives were available. In considering the location of the weir, the growers considered a number of alternatives prior to selecting the present location. The rationale for selecting the design and location was:

- (1) The weir was at the narrowest point in the drainage line therefore minimising the disturbance of vegetation and reducing the cost of earthworks.
- (2) The weir provides an optimum haul route that connects existing farm roads between the appellant's properties, thereby improving the efficiency of farming operations.
- (3) The weir was as far down the catchment as practicable to maximise the storage volume and optimise the capture of potentially contaminated runoff from the catchment.
- (4) The weir does not result in a substantial reduction in freshwater flows, yet still provides for outwelling of material to fisheries resources in the estuary during flood events.
- (5) The location was as far down the catchment as practicable, but still well landward of any mangroves, ensuring no mangrove habitat was disturbed during construction, and, in fact is located at or above the level of Highest Astronomical Tide.

A detailed assessment of the potential environmental impacts of the weir was undertaken by Max Winders and Associates (Consulting Engineers & Environmental Scientists) and an economic analysis undertaken by Sugar Services, Bundaberg. It was found that the weir maximises the treatment of potentially contaminated runoff from 435ha catchment. The location may therefore be considered the optimal location and results in:

- (1) Restoration of Pre-European Sediment and Nutrient Flux.
- (2) Retention of agricultural chemicals.
- (3) “Out of kind” mitigation through ‘outwelling’ from the freshwater wetland and the provision of a refuge habitat for fauna inextricably linked to the health and visibility of estuarine ecosystems eg. Wading birds.
- (4) Significant improvement in crop yield.

The Fritz's and the Shepherd's were summoned to appear in Magistrates Court on 28th of May 2003, charged with building a wall across a waterway and destroying marine vegetation without a permit. The Court case was held 28th May 2003 and on the advice of their Barrister and faced with the financial clout of the Queensland Government they decided to cut their losses and plead guilty. The Fritz's and the Shepherds and their contractor were each fined \$1,000 on offences under the fisheries act in relation to destruction of Salt Couch.

In Mr Fritz's and Mr Shepherd's view “...We feel we have been victimised by Fisheries and believe they are wrong but intend breaking us with the things they are doing ...we felt that the best option was for us to plead guilty, as the Barrister was informed that Fisheries were to spend any amount of money to save face.”

ATTACHMENT 2

In November 2002, I announced the national approach to the management of Grey-headed Flying-fox and the Spectacled Flying-fox. Administrative Guidelines were released to assist orchardists to determine whether they needed to refer certain actions under the EPBC Act. The Guidelines provided information about the threats to both species; they expressed views about the sorts of actions that would be likely to have a significant impact on threatened flying-foxes; and they provided information about how to make a referral.

The recent Federal Court case *Humane Society International Inc v Minister for the Environment and Heritage [2003] FCA 64* (12 February 2003) does not curtail the ability of the Commonwealth Environment Minister, consistent with the EPBC Act, to adopt a national approach to the management of threatened species in co-operation with the States and issue guidelines expressing views on whether particular kinds of activities are likely to involve a "significant impact" on threatened species or areas of special value.

The Court held, however, that the Administrative Guidelines should not purport to exempt individual orchardists from the need to consider whether they should refer their actions to the Minister under the EPBC Act. Such purported exemptions are not authorised by the Act and do not have any legal force. It is important and a requirement of the EPBC Act for individual orchardists to consider the particular facts and circumstances of their actions themselves in deciding whether they need to make a referral under the EPBC Act. A referral will need to be made if an action is likely to have a significant impact on the species.

The Administrative Guidelines have now been revised to take account of the Federal Court decision and to make it absolutely clear that farmers and orchardists must decide for themselves whether they need to make referrals under the EPBC Act. In particular, any statements to the effect that farmers complying with a valid State permit or licence to shoot a specific number of Spectacled or Grey-headed Flying-foxes do not need to make a referral under the EPBC Act have been retracted.

... To assist orchardists in considering whether a referral is necessary, the Guidelines continue to provide guidance on when an action is likely to have a significant impact on a matter protected by the EPBC Act. The Federal Court decision did not change the value of the scientific evidence I considered nor invalidate my view on the likely significance of the impacts of crop protection measures on threatened Flying-fox species. In my view, it continues to be unlikely that shooting of threatened Flying-foxes under a valid State permit for the 2002-03 fruit season would have a significant impact on the species. This is because I believe, on the weight of scientific evidence that has been available to me, that shooting in the numbers you are permitted to shoot under State permits issued in accordance with the national management approach would be unlikely to have a significant impact on the species as a whole.

Contrary to some media reports, the Federal Court did not decide that every individual orchardist needs to put in a referral or that the Commonwealth Environment Minister needs to examine every individual activity. Rather, each individual orchardist needs to consider whether a referral is required. If referrals are made, then I will examine those referrals on their merits.

As previously noted in the Guidelines, the national management approach and these Guidelines only apply to the 2002-03 fruit season and will be reviewed in June 2003. New information for orchardists will be provided prior to the 2003-04 fruit season.

DAVID KEMP

Federal Minister for the Environment and Heritage
20 March 2003

ATTACHMENT 3

Phone: (07) 4156 1287

AR & AL Read
431 Reads Road
Bucca
BUNDABERG Q 4670

To Whom It May Concern,

I wish to express our extreme dissatisfaction with, and grove injustice of the Vegetation Management Act as it applies to our properties.

Some of these properties have been in the hands of the Read family for nearly 100 years; having been freeholded in 1915 after some 10 or so years of leasing some part of the property has been growing sugarcane for the same length of time, having supplied the Invicta Mill in the early 19??'s.

My father took over from my Grandfather in 1925. My brother and I took over from my father in 1951. My wife and I then purchased my brothers share in 1991. Over all this time we grew sugarcane on a dryland basis and only increased our cleared area only by the area required to meet increased assignment granted for the growing of sugarcane.

In 1966 we purchased another property on lower Waterloo road containing 399 hectares of which about 15 hectares was cleared and assigned for canegrowing. The remainder consisted of 40/45 year old regrowth (very dense). The property had previously been ring-barked and used as a dairy and cane farm. Today we have about 40 hectares cleared and 36 hectares growing dryland sugarcane. The vegetation now is so dense that it would require at least 20 hectares to run one least year round which makes it uneconomical to even fence the property. We purchased this property because of the estimated 100 hectares of arable land that would allow us to keep up with increased can assignments in the future. It now appears unlikely that we will be able to clear anymore of this land under the present E.P.A.

We have always cleared in an environmentally friendly way, leaving wildlife corridors and wind breaks where ever possible. We have practical erosion control in the way of contour farming since 1957, after having attended a soil conservation school at Gatton College under the *Adult Education Scheme* in that year. We own and use our own "dumpy level."

I would say (and this is open to inspection at anytime) that over the 100 years that our family have been part of the sugar industry in this area we have not been part of the sugar industry in this area we have not been responsible for land degradation that would require even 1 of the (Telstra sale) sponsored land reclamation scheme.

In total we own 746 hectares of land under Freehold Title, of which 164 hectares are cleared and under crop. The remaining 582 hectares including 110 hectares of good canegrowing land are still in their natural state; much of it being so thick that it wont produce saleable timber or grass for the large kangaroo population, hence every year the 'Roos' do considerable damage to our young cane crop. This gives us a clearing rate of approximately 22% of total as compared to most Bundaberg Cane farmers including my immediate neighbours of between 90% and 100%. If this ratio of cleared to uncleared is not allowed to be increased then it will certainly demonstrate that you are severely punished for being an environmentally friendly farmers and rewarded for being a 'vandal' to our environment.

When this legislation came into force my immediate neighbour who has a common boundary with us had two large irrigation dams and some 15 to 20 hectares of uncleared old growth forest adjoining a wildlife corridor in our property. All of his property and a small area of our wildlife corridor are mapped 'white not of concern'. All of our (AR & AL Read) properties are mapped (Pink sub-dominant endangered). I would like to know how anyone can suggest that a four wire boundary fence can completely change the ecosystem when all the same species grow on both sides of the boundary fence. The few small areas that are mapped white on our properties would, except for one small area, create environmental disasters if they were cleared. Our neighbour has since cleared the majority of his 15/20 hectares; in his own words, just to make it look nice.

In 1978 the *Bundaberg Irrigation Scheme*, from which our area was excluded because of the extra cost, came into being. In 1995 under the "Sugar Industry Infrastructure package" the "Avondale Water Board" was formed. This allowed us to access water from the Avondale Barrage on the Kolan River providing we paid \$100 per ML for our allocation and provided the necessary infrastructure to deliver the water to the eight recipient farms. We understood that this entitled us to 100% of our purchased allocation. We were the first in Queensland to buy allocation. We had budgeted for a cost at 100% allocation of \$63 a megalitre delivered to our farm pumps. However this was not the case as in 1st year 1997 we received 35% of allocation, 2nd year 60%, 3rd year 1999 60%, year 2000 60% plus 15% in May after 6 inches of rain, year 2001 40% and year 2002 10% plus 100% after February 2003. This resulted in actual water costs delivered to our pumps of \$120 to \$140 pre megalitre.

When we received the additional 15% in May 2001 after receiving 6 inches of rain it was evident we would not use the water by the end of the water year namely 30th June 2001. I sought SunWater permission to carry 130 megalitres carried into 2001/2002 water year. When this was refused I decided I would put in an on farm dam which was allowable up to 5 hectares coverage. I had a contractor survey the job and he estimated that he could complete the job in time for me to fill it by the end of the water year 30/6/01.

Before we started the dam wall I thought, to be on the safe side, I would contact DNR&M one, Shaun Glover came out and immediately put a stop to our operation because he found a couple of Blue Gums growing in the bed of the gully. He also forbid me to cut a few wattle trees so that I could take sights with the level to establish the five hectare boundary, so we had to pay for and lose our 130 megalitres of water. This put a stop to our plan to grow a summer crop of pumpkins on our followed cane land as our next years allocation was only 40%. Our neighbour who with two big dams full of water and his 40% allocation grew an excellent crop of pumpkins which grossed him up to \$1300 per tonne. We estimated that this deprived us of a nett income of \$70 000. In December of the same year the said Shaun Glover had a Botanist from Gladstone inspect the property in question he then advised me that on the Botanists advice the category of the property had changed from Sub-Dominate Endangered to Sub-Dominate of Concern. On meeting with Shaun Glover again I said "that means I can go ahead and build a Dam" to which he replied "No nothing has changed you still can't even cut the wattle trees."

When one considers that the proposed dam would catch the run off from three different farms (something we are supposed to do to be good environment protectors) one must wonder what the reasoning is or whether it verges on lunacy or is deliberately done to get rid of Family Farms.

We had considered building this dam some years ago but Frank Dwyer from Water Resources convinced us that due to the limited catchment area it would be uneconomic. However with the advent of the *Avondale Irrigation Scheme* (previously mentioned) the dam would serve as a tail water catchment including run off from 3 different farms, a storage area for purchased water in

years of unused allocation, due to weather patterns, and supplementary water in years of low allocation due once again to weather pattern.

Now due to low sugar prices, 3 year of drought or semi drought, low water allocation and no supplementary dam we have not been able to diversify or even produce a reasonable sugarcane crop and our financial position is severely threatened to the extent that in the near future we could be looking at losing our family farm and our 100 years heritage.

This is happening because of the fascist dictatorial attitude of both State and Federal Governments, (who both ponder to the World Wide Fund for Nature and the Greens) in that they allowed the mapping to be done in an unequable and unjust manner without any consultation with landowner or any ground inspections prior to becoming low. Much of land that was mapped white, the majority of which has already been cleared, consisted of the same remnant eco-systems as our land that is mapped pink (sub-dominant endangered).

If the mapping was done by inexperienced unknowledgeable academics, then what has happened to us and no doubt many other people is discriminatory. On the other hand if it was done by experienced and knowledgeable people with no sense of moral justice then as far as we are concerned it is verging on terrorism and is something that the magnet on the fridge wont fix (emphasis added).

In our opinion a moratorium should have been called prior to the approval of the mapping of the respective ecosystems so that consultation might have prevented the severe punishment imposed on the environmentally friendly landowners i.e. tying up expensive arable land contained in large ecosystems, while allowing the environmental vandals to be rewarded by clearing their small remnant areas which in many cases will invite salinity.

ATTACHMENT 4

Economic Impact of the *Vegetation Management Act 1999* on the Mackay Sugar Region

Executive Summary

The most severe economic impact of the *Vegetation Management Act 1999* (VMA) on the Mackay Sugar Industry is considered to be on individual growers. There are an estimated 9 811 ha of suitable cane land with endangered or of concern vegetation on freehold land which cannot be cleared. The direct economic impact on the grower is the loss of the potential marginal profit from area of \$6.6 million per annum. The capitalised growers marginal profit for this area reflects an estimated value of \$80.4 million (\$8 195 per ha).

This total figure disguises the economic impact on the individual growers. Case study 1 shows that the impact of the VMA has caused individual growers to become financially unviable. Case study 2 and 3 show that growers who had invested in suitable cane land with longer term intentions to develop have had the value of the investment effectively reduced to zero with no demonstrated economic value of the land to the individual and with no ability to generate an economic return. Further to this the individual growers have been left with land stewardship obligations for which there is no apparent economic return.

The economic impact on the region as a whole is not expected to be dramatic. The potential loss of turnover from the area of suitable cane land that cannot be cleared is estimated at \$26.7 million per annum, which represents an increase in the ten year average turnover of 8%. The regional sugar industry is not in an expansion phase at present and there is suitable cane land available, which can be cleared and developed to cane. Therefore, this loss will occur over time. However it does represent the opportunity cost over the long term, which the community is forgoing for the benefits of retaining vegetation.

The sugar millers marginal profit loss on cane from the area, which cannot be cleared, is estimated at \$5.1 million per annum. Again this will only impact in the long term when all other suitable cane land within the traditional area has been developed.

The regional sugar industry is mature and the overall conclusion is that there will be an economic impact on the regional industry and community but it will not be immediate or dramatic. This however is not true of the individual grower who is impacted on directly and severely. The individual growers effectively carry this loss for the benefit of the community.

Economic Impact of the Vegetation Management Act 1999 on the Mackay Sugar Region

Introduction

The *Vegetation Management Act 1999* (VMA) classifies regional ecosystems status as either “endangered”, “of concern” or “not of concern” based on their percentage of pre clearing area. The “endangered” is protected and it is assumed that permission to clear for commercial purposes will not be given. The ‘of concern’ is currently not protected and a certain amount of clearing may take place however there is pressure to protect this area and within the study area it is assumed that this area will also not obtain permission to be cleared. The effect is that areas suitable for cane cannot be cleared and are thus lost to the sugar industry.

The objective of this document is to establish the economic impact that the *Vegetation Management Act 1999* (VMA) has on the local Mackay sugar industry and region. Estimates of the economic impacts will be made on the various parties affected from the individual who owns suitable land and cannot develop sugar cane through to the sugar miller and the local community.

The Mackay Sugar Industry in Perspective

The Mackay sugar industry covered in this study consists of five sugar mills which have crushed an average of 7.7 million tonnes of cane producing 1.8 million tonnes of sugar and generating an average turnover of \$353 million per annum for the ten year period from 1992 to 2001 as shown in Table 1 with further details in Appendix 1. As at April 2002 there were 1,379 growers with a cane supply area (CPA) of 120,610 ha. The contribution to the local economy when considering the multiplier effects is significant. Added to this the number of family owned farms contributes to a stable and economic rural society.

Table 1
Mackay Sugar Industry Area Production and Turnover

	Units	Total
Number of farming units as at April 2002	No.	1,379
Cane Production Area (CPA) as at April 2002	ha	120,610
Average Cane Production 1992 - 2001	t	7,701,025
Average Sugar Production 1992 - 2001	t	1,081,465
Average Turnover 1992 - 2001	\$	352,879,849

Source: CANEGROWERS Mackay

The industry operates without any significant form of subsidy in a distorted world market with a volatile world price. At present the industry economics do not appear to be favourable for development with low world prices and a series of below average crops (Appendix 1). However it cannot be assumed that this will always be the case and development of cane land will continue as individual growers and mills strive for economies of scale and low cost production. Thus the areas suitable for cane affected by the VMA will with time reflect a loss to the industry.

The Areas Involved

A mapping exercise has been conducted where the areas from the Sugar Cane Land Suitability Study of classes 1 to 4 for Mackay Sugar and Plane Creek area (Appendix 6) have be overlaid with

the “endangered” and “of concern” vegetation areas. This only covers the traditional cane supply area of the existing sugar mills, which is essentially a fit to the present rail system for cane transport.

Table 2 shows the results with 5,763 ha of suitable cane land within the traditional area with “endangered” vegetation, which cannot be developed due to the VMA. Of this 1,499 ha relates to the Mackay Sugar area and 4,264 ha to the Plane Creek area. The area of “of concern” vegetation on suitable cane land is 4,048 ha with 1,753 ha in the Mackay Sugar area and 2,295 in the Plane creek area. This area does have a limited amount, which could be cleared, but generally it will not be available for clearing. Further to this there may be restrictions through the Regional Vegetation Management Plans on a property. Thus the total extent of the suitable cane land not to be cleared in reality is expected to be the “endangered” area and most of the “of concern” areas. The total “endangered” area and of concern area is 9,811 ha with 3,252 in the Mackay Sugar area and 6,559 ha in the Plane Creek area.

Table 2
Suitable Cane Land Lost due to the Vegetation Management Act

	Mackay Sugar	Plane Creek	Total
Suitable cane land on "endangered" area (ha)	1,499	4,264	5,763
Suitable cane land on "of concern" area (ha)	1,753	2,295	4,048
Suitable cane land lost due to VMA (ha)	3,252	6,559	9,811

Source:VMA Regional Ecosystem status of "endangered" and "of concern" as available from Queensland Herbarium

: Mackay Sugar Cane Land Suitability Study GK Hob & PG Shields Dept of Primary Industries 1985

:Plane Creek Sugar Cane Land Suitability Study AK Willis & DE Baker Dept of Primary Industries 1988

In any mapping exercise there will be areas that are shown as suitable but for a variety of reasons will never be developed. The suitable cane areas have been adjusted to exclude as many of these areas as possible. The areas of “endangered” and “of concern” vegetation have been and are in the process of being changed as actual circumstances on the ground have shown the original map to be incorrect. The areas as determined are considered to be as accurate as possible within these constraints.

Local Economic Impact

The overall economic impact to the region is measured as the average loss of turnover that would have been generated and mostly spent within the community from the area of suitable cane land that cannot be cleared.

Table 3 shows the lost cane production from the endangered and of concern areas based on a yield of 65 tonnes per ha of CPA per annum that is slightly lower than the ten year average of 67 tonnes per ha per annum (Appendix 1).

This is converted to sugar at 13.7% which is again below the ten year average Commercial Cane Sugar (CCS) percentage of 13.84% (Appendix 1).

The average sugar price over the last five years has been \$306 and this is used to calculate the turnover lost which is \$15.7 million for the endangered area and \$11.0 million for the of concern area. Thus the total potential loss in turnover is \$26.7 million.

With strong backward and forward linkages in the sugar industry and a multiplier effect of 3 to 3.5 this would have a significant impact on the local economy.

**Table 3
Estimated Loss in Cane, Sugar and Turnover**

	Assumptions	Units	Mackay Sugar	Plane Creek	Total
"Endangered" Area					
Lost Area of suitable cane land		ha	1,499	4,264	5,763
Lost Cane	t/ha 65CPA 13.7	t/annum	97,435	277,160	374,595
Lost Sugar	% sugar	t/annum	13,349	37,971	51,320
Lost Turnover	\$306/t sugar	\$/annum	4,084,670	11,619,102	15,703,772
"Of Concern" Area					
Lost Area of suitable cane land		ha	1,753	2,295	4,048
Lost Cane	t/ha 65CPA 13.7	t/annum	113,945	149,175	263,120
Lost Sugar	% sugar	t/annum	15,610	20,437	36,047
Lost Turnover	\$306/t sugar	\$/annum	4,776,802	6,253,714	11,030,517
"Endangered" and "Of Concern" Area					
Lost Area of suitable cane land		ha	3,252	6,559	9,811
Lost Cane	t/ha 65CPA 13.7	t/annum	211,380	426,335	637,715
Lost Sugar	% sugar	t/annum	28,959	58,408	87,367
Lost Turnover	\$306/t sugar	\$/annum	8,861,472	17,872,816	26,734,288

Impact on the Miller

An agreement between millers and growers effectively determines the balance between milling capacity (tonnes per hour) and the cane production area (CPA) and hence the milling season length. Any change in the CPA is by agreement with the consequent increase in milling capacity or milling season length or both. The miller would generally prefer to increase cane production area without additional capital investment in milling capacity or transport systems. It is assumed that ultimately the areas that cannot be developed for cane production due to the VMA will prevent the miller obtaining the marginal benefit from that lost cane supply. This assumption will only hold true in the long term. In the short term there is still area available in the traditional supply region that can be developed.

At the Mackay Sugar Mills, 4,000 ha of cane production area have just been issued without an increase in milling capacity. Most of this area is still to be developed.

**Table 4
Millers Marginal Loss**

	Assumptions	Units	Mackay Sugar	Plane Creek	Total
"Endangered" Area					
Lost Area of suitable cane land		ha	1,499	4,264	5,763
Lost Cane	t/ha 65CPA	t/annum	97,435	277,160	374,595
Millers marginal loss	\$8.00/t cane	\$/annum	779,480	2,217,280	2,996,760
"Of Concern" Area					
Lost Area of suitable cane land		ha	1,753	2,295	4,048
Lost Cane	t/ha 65CPA	t/annum	113,945	149,175	263,120
Millers marginal loss	\$8.00/t cane	\$/annum	911,560	1,193,400	2,104,960
"Endangered" and "Of Concern" Area					
Lost Area of suitable cane land		ha	3,252	6,559	9,811
Lost Cane	t/ha 65CPA	t/annum	211,380	426,335	637,715
Millers marginal loss	\$8.00/t cane	\$/annum	1,691,040	3,410,680	5,101,720

The miller's marginal profit is the income from the last tonne of cane crushed less the direct costs of milling that cane. Thus the fixed costs are not taken into account. The marginal profit would vary from mill to mill and on the distance the cane has to be transported. Table 4 shows the estimated lost area and tonnage and the miller's marginal loss. The marginal loss is based on an estimate of \$8 per tonne cane or a total of \$5.1 million per annum.

Individual Grower Impact

Individuals have acquired undeveloped land suitable for growing cane in a variety of ways and for a number of reasons. The common fact is that if they no longer have the option of clearing the land due to the VMA, there will be an economic impact on each individual. To illustrate the affect on the individual three case studies have been examined.

Case Study 1

Table 5 reflects the present land holding and land use for case study 1. There are two contiguous properties totaling 271.3 ha with 122 ha of cane land, 81 ha suitable cane land with endangered vegetation and approximately 10 ha of suitable land which could be developed but is peripheral to the endangered vegetation and resultant field sizes and shapes are considered to be uneconomic to develop on their own. Thus there are considered to be 91 ha directly affected by the VMA.

The grower had another cane property some distance away, which was sold at the end of 1999 with the advent of less favourable economic circumstances. The plan was to relieve immediate financial pressure and then develop the uncleared area to benefit from the economies of scale and having a consolidated block of land. Without this additional 91 ha, the remaining 122 ha is not considered viable into the future. The grower has been reluctant to have the property re-valued by the bank for fear that it may jeopardise his borrowing capacity.

Table 5
Areas Involved

	ha
Property 1	244.3
Property 2	27.0
Total	271.3

Land use	ha
Existing cane land	122.0
Cleared suitable land	0.0
Not to be cleared suitable land	81.0
Can be cleared suitable land	10.0
Other	58.3
Total	271.3

The major loss to the grower is the marginal profit that could have been generated by developing the 91 ha of land to sugar cane. The marginal profit is based on future expected yields, prices and costs. The assumptions on these take a long term view, which is more optimistic than the actual present situation.

The details of the assumptions and calculations to obtain the average annualised marginal profit over a full crop cycle are shown in Appendix 2. This accounts only for the additional income and costs associated with the 91 ha. Table 6 shows that the annualised area harvested over the cycle to be 76 ha the total cane production to be 7,053 tonnes at 93 t/ha harvested with a CCS of 13.7%.

Table 6
Average Annual Lost Yield and Area

Area cane land	91 ha
Area Harvested	76 ha
Tons cane	7,053 t
Tonnes cane/ha harvest	93 t/ha
CCS%	13.70%

This would give an annual additional income of \$192,687 (\$2,117 per ha) and additional costs of \$114,239 (\$1,255 per ha) giving an annual marginal profit of \$78,448 (\$862 per ha) as shown in Table 7. This is the annualised financial loss to the grower because the area cannot be cleared and developed to sugar cane.

Table 7
Average Annual Lost Marginal Profit (\$)

	Total	Per ha	Per ton
Gross income	192,687	2,117	27.32
Total Costs	114,239	1,255	16.20
Lost Marginal Profit	78,448	862	11.12

The capital value of this lost marginal profit is calculated using various methods in Table 8. The objective is to determine the capital sum required to achieve a return equal to the value of the lost margin. By capitalising the \$862 marginal profit at a rate of 6% the gross value would be \$14,368 per ha. From this, the \$3,000 per ha capital costs for clearing is deducted which gives a capital value to the grower of \$11,368 per ha. Thus a lump sum of \$1,034,467 would be the value of the land in the grower's hands if developed to sugar cane.

An alternative method would be the terminal value of an annuity based on the \$862 marginal profit at 6% over a period of time between 10 and 20 years. The value to the grower after deducting the capital cost would be \$8,363 per ha (\$761,007 total) over 10 years and \$28,712 per ha (\$2,612,756 total) over 20 years.

Table 8
Capital Value of Lost Marginal Profit

	Period	Rate	Avg. annual Marginal Profit \$/ha	Gross Value \$/ha	Capital \$/ha	Value to grower \$/ha	Value to grower Total \$
Capitalised value	-	6%	862	14,368	3,000	11,368	1,034,467
Terminal value of annuity	10 years	6%	862	11,363	3,000	8,363	761,007
Terminal value of annuity	20 years	6%	862	31,712	3,000	28,712	2,612,756

However the grower believes that the balance of the land would be an uneconomic unit and as such would have also decreased in value. Added to this the grower does not want the responsibility or cost of the land stewardship obligations for land, which has no apparent direct economic benefit to him.

The impact of the VMA has been to leave the grower with a property that is no longer viable and his livelihood at stake. The grower believes that to offset the impact of the VMA he would require the full value based on the outright sale of the whole farm at the full market value of the land before the effects of the VMA.

As a guideline to the land market values Table 9 shows the market value of the cane land at \$10,031 per ha and undeveloped land at \$2,930 per ha based on the land sales summary in Appendix 5. The total value would be \$1.49 million.

Table 9
Market Value of Land

	Area ha	Value \$/ha	Gross payment \$
Existing Area Cane	122.0	10,031	1,223,834
Potential cane land lost	91	2,930	266,674
Total			1,490,508

Case Study 2

Case Study 2 reflects the situation where the grower made an investment in land with the intention of developing it to cane over a number of years. Two contiguous properties were purchased one of 82 ha which has been developed with 65 ha of cane land and is not affected by the VMA. The second property is 442 ha and the present land use is shown in Table 10. Clearing has started with 32 ha having been cleared before the advent of the VMA but not planted to cane and there are a further 99 ha of suitable cane land with endangered vegetation and 60 ha of suitable land with of concern vegetation. There are 182 ha of land not suitable for cane.

Table 10
Areas Involved

Land use	ha
Cleared suitable land	32
Endangered suitable land	99
Of concern suitable land	60
Unsuitable cane land	182
Total area	442

Land considered affected	ha
Cleared suitable land	32
Not to be cleared suitable land	99
Of concern suitable land	60
Total	191

The grower has 191 ha of suitable land that was to be developed giving a unit of 256 ha. The 32 ha already cleared is situated at the furthest point from the existing cane and on its own would be difficult to manage if planted to cane. The remaining 60 ha is (as with Case Study 1) around the periphery of the endangered vegetation and are affected in terms of the resultant field sizes and shapes that would eventuate. The grower has not just lost the 99 ha but has been left with a difficult development situation and a farm, which will be more costly to operate if developed. Thus the direct loss to the grower is the endangered land, the higher cost of farming the balance of the land and the lost economies of scale.

As with Case Study 1 the grower does not want the land stewardship obligations for land, which has no apparent direct economic benefit to him. At the same time the grower does not want to have a piece of land in the middle of his operation over which he had no control.

The development potential of the property has been reduced to the point where it is questionable as whether it would be viable. To find properties with the same potential in the same locality is not considered an option thus the market value of the undeveloped land would not be a true assessment of the impact. The economic impact is considered to be the full potential marginal value of the 191 ha of suitable cane land.

Table 11
Average Annual Yield and Area Lost

Area cane land	191 ha
Area Harvested	159ha
Tons cane	14007t
Tonnes cane/ha harvest	88t/ha
CCS%	13.70%

The details of the assumptions and calculations to obtain the annualised yield and marginal profit are shown in Appendix 3. Table 11 shows the annualised cane yield that would be expected from the 191 ha of 14007 at 88 tonnes per ha harvested.

Table 12
Average Annual Lost Margin Profit (\$)

	Total	Per ha	Per ton
Gross income	382687	2004	27.32
Total Costs	254396	1598	18.16
Lost Marginal Profit	128292	672	9.16

Table 12 shows the lost annual marginal profit of \$128,292 or \$672 per ha. This is lower than Case Study 1 because the relative extent of the area would require the employment of a full time person and additional machinery, which is shown in depreciation.

Table 13
Capital Value of Lost Marginal Profit

	Period	Rate	Avg. annual NFI lost \$/ha	Gross Value \$/ha	Capital outflow \$/ha	Value to grower \$/ha	Value to grower Total \$
Capitalised value	-	6%	672	11,195	3,000	8,195	1,565,195
Terminal value of annuity	10 years	6%	672	8,853	3,000	5,853	1,117,986
Terminal value of annuity	20 years	6%	672	24,708	3,000	21,708	4,146,285

When capitalised at 6% and the once off development costs deducted (Table 13) the value of the lost marginal profit of \$672 to the grower is \$8,195 per ha or with a terminal value of annuity over ten years of \$5,853/ha (\$21,708/ha over 20 years). The total capitalised value is \$1.56 million.

The larger property also contains a possible dam site for irrigation of both the developed area and a portion of the potential new area. This has not been taken into account.

Case Study 3

In this Case Study the grower has six properties totalling 1,283 ha with 467 ha of cane land as shown in Table 14. The 78 ha which is suitable cane land with endangered vegetation is a relatively

square block and does not have an affect on the development of any other suitable land on the properties.

Table 14
Areas Involved

	ha
Property 1	272.0
Properties 2 - 6	1011.7
Total	1283.7

Land use	ha
Existing cane land	467.0
Not to be cleared suitable land	78.0
Other	738.7
Total	1283.7

The 78 ha are relatively small compared to the whole cane area and is in a physical location on the properties that makes it accessible only through some of the other properties. Due to this the grower definitely wants to maintain control of the area. However the costs and responsibility of his land stewardship obligations would be for land that had no direct economic benefit to him and the cost of this would be an additional impact of the VMA.

Table 15
Average Annual Yield and Area Lost

Area cane land	78ha
Area Harvested	65ha
Tons cane	6,045t
Tonnes cane/ha harvest	93t/ha
CCS%	13.70%

Table 16
Average Annual Margin Lost (\$)

	Total	\$/ha	\$/t
Gross income	165,160	2,117	27.32
Total Costs	97,362	1,248	16.11
Lost Marginal Profit	67,798	869	11.22

The area was part of a planned development and the lost value to the grower is at the margin with no increase in labour numbers or machinery. Appendix 4 Tables 4.1 and 4.2 reflect the full cycle with the assumed income and costs. The annualised summary of the yields is shown in Table 15 with the expected yield loss of 93 tonnes cane per ha per annum and in Table 16 the lost marginal profit of \$869 per ha per annum or \$67,798 per annum in total. When this lost marginal profit is capitalised at 6% and the clearing costs deducted the value to the grower is \$11,487 per ha or \$896,000 for the whole area as seen in Table17. The value to the grower using the terminal value of annuity over 10 years is \$8,457 per ha and over 20 years is \$28,974 per ha. This excludes any cost of management and responsibility for the land stewardship obligations.

Table 17
Capital Value of Lost Income

	Period	Rate	Avg. annual income \$/ha	Gross Value \$/ha	Capital \$/ha	Value to grower \$/ha	Value to grower Total \$
Capitalised value	-	6%	869	14,487	3,000	11,487	895,971
Terminal value of annuity	10 years	6%	869	11,457	3,000	8,457	659,635
Terminal value of annuity	20 years	6%	869	31,974	3,000	28,974	2,260,000

Impact on Growers Overall

Marginal Profit and Land Market Value Loss

It is believed that the majority of the land that cannot be cleared within the traditional cane growing area would have been developed as additions to existing cane operations. Thus the value of the majority of the area to the growers would be the capitalised marginal profit. The range of marginal profit in the case studies is from \$869/ha to \$672/ha. Table 18 shows the calculation of the total value to the growers of the suitable land lost using the lower marginal profit of \$672 per ha from Case Study 2 (Table 13) with the capitalised value to the grower of \$8,195 per ha. This is then multiplied by the total suitable cane areas that cannot be cleared (Table 2). The estimated loss in marginal profit to growers as a whole due to the VMA is \$6.6 million with \$3.87 million from “endangered” area and \$2.72 million from “of concern” area. When capitalised this reflects a value to growers of \$80.4 million with endangered area \$47.23 and “of concern” area \$33.17 million.

Table 18
Growers Marginal Loss and Capital Loss

	Assumptions	Units	Mackay Sugar	Plane Creek	Total
"Endangered" Area					
Lost Area of suitable cane land			1,499	4,264	5,763
Lost tonnes cane	t/ha 65CPA	t/annum	97,435	277,160	374,595
Growers' lost marginal profit	\$672/ha	\$/annum	1,006,855	2,864,061	3,870,916
Capitalised marginal profit value	\$8,195/ha	\$	12,283,910	34,942,356	47,226,266
Undeveloped land value	\$2,930/ha	\$	4,392,802	12,495,602	16,888,403
"Of Concern" Area					
Lost Area of suitable cane land			1,753	2,295	4,048
Lost tonnes cane	t/ha 65CPA	t/annum	113,945	149,175	263,120
Growers' lost marginal profit	\$672/ha	\$/annum	1,177,462	1,541,515	2,718,978
Capitalised marginal profit value	\$8,195/ha	\$	14,365,373	18,806,920	33,172,293
Undeveloped land value	\$2,930/ha	\$	5,137,146	6,725,470	11,862,616

"Endangered" and "Of Concern" Area

Lost Area of suitable cane land			3,252	6,559	9,811
	t/ha				
Lost tonnes cane	65CPA	t/annum	211,380	426,335	637,715
Growers' lost marginal profit	\$672/ha	\$/annum	2,184,317	4,405,577	6,589,894
Capitalised marginal profit value	\$8,195/ha	\$	26,649,283	53,749,276	80,398,558
Undeveloped land value	\$2,930/ha	\$	9,529,947	19,221,072	28,751,019

If the area were not an addition to an existing cane operation the loss in value of the suitable cane land because it can no longer be cleared for cane would be the loss in market value. There is no demonstrated commercial value, on any significant scale, for land, which cannot be cleared, and it is assumed to have a zero commercial value. The market value lost to the owner of the land would thus be the unimproved value before the introduction of the VMA. Table 19 shows the total value of the lost suitable cane land if it was valued at the unimproved value of \$2,930/ha (Appendix 5). The total value would be \$28.75 million with endangered area at \$16.89 million and the "of concern" area at \$11.86 million.

Land Stewardship Obligation

In most cases within the traditional cane areas the area that cannot be cleared has no alternative direct economic use as in all the case studies. The VMA has the effect of forcing on the grower the acceptance of the costs and risks that are part of land stewardship obligations for this area with no direct economic return and therefore constitute an economic impact on the growers.

The grower's option is if possible outright sale of the land to avoid stewardship obligations (as with Case Study 1 and 2) or accept the obligations as a cost and risk for no potential economic gain to maintain control of land within their existing boundaries as in Case Study 3.

With no direct economic benefit to the landowners there is limited motivation to manage the areas. If management of the endangered areas is not maintained at an acceptable level there could be a loss incurred by neighbouring growers due to fire hazards and weed or pest infestations. This would possibly not be a large overall effect but for an individual may be a significant impact of the VMA.

Employment Lost

Table 20 reflects an estimate of the employment that could be created with the additional area and tonnage. As a broad estimate a harvesting/haulout unit typically employs 3.5 people with the potential for between 50,000 tonnes and 80,000 tonnes cane and the average family farm of 87 ha or approximately 6,000 tonnes takes 1.5 people to operate (typically the grower and his wife). With the use of the marginal concept these have been reduced to 3.5 people per 100,000 tonnes cane and 1.5 people per 20,000 tonnes cane. This would be approximately 22 harvesting jobs and 48 farming jobs.

Table 20
Possible Direct Employment Lost

	Assumptions	Tonnes cane	Units	Mackay Sugar	Plane Creek	Total
"Endangered" Area						
Lost Area of suitable cane land				1,499	4,264	5,763
Lost tonnes cane	65 t/ha CPA		t/annum	97,435	277,160	374,595
Direct Harvest employment	3.5 units /	100000	Lab Units	3	10	13
Direct Farm employment	1.5 units /	20000	Lab Units	7	21	28
"Of Concern" Area						
Lost Area of suitable cane land				1,753	2,295	4,048
Lost tonnes cane	65 t/ha CPA		t/annum	113,945	149,175	263,120
Direct Harvest employment	3.5 units /	100000	Lab Units	4	5	9
Direct Farm employment	1.5 units /	20000	Lab Units	9	11	20
"Endangered" and "Of Concern" Area						
Lost Area of suitable cane land				3,252	6,559	9,811
Lost tonnes cane	65 t/ha CPA		t/annum	211,380	426,335	637,715
Direct Harvest employment	3.5 units /	100000	Lab Units	7	15	22
Direct Farm employment	1.5 units /	20000	Lab Units	16	32	48

Conclusion

The economic effect of the VMA is based on the 9,811 ha of land, which is suitable for growing cane but can no longer be cleared. This leads to a direct loss of turnover to the region of \$26.7 million, which represents an increase in the ten-year average turnover of 8%. The regional sugar industry is not in an expansion phase at present and there is suitable cane land available, which can be cleared and developed to cane. Therefore this loss will occur over time with no dramatic impact. However it does represent the opportunity cost over the long term, which the community is forgoing for the benefits of retaining vegetation.

The sugar miller's marginal profit loss on cane from the area, which cannot be cleared, is estimated at \$5.1 million per annum. Again this will not be a dramatic impact and will only impact in the long term when all other suitable cane land within the traditional area has been developed.

There is however a dramatic economic impact on individual growers. Each individual circumstance is different and as the case studies reflect the impact can be short term and severe. The approach when looking at individual impacts has been to look at what is required to leave the individual no worse off than he was before the VMA.

Case Study 1 demonstrates the individual whose business is considered to be not viable into the future due to the VMA and would require the full pre VMA market value to be able to buy an equivalent property and be no worse off than before the VMA.

Case Study 2 shows the situation where a property was purchased with longer term plans to develop it to sugar cane but the VMA has reduced this potential substantially. The impact on the grower is the loss of the marginal profit that would be generated by adding this area to existing cane land. The grower does not want the land stewardship obligations and the sale of the whole property based on the value of the land in his hands appears to be the preferred option.

In Case Study 3 the grower considers that the land has no economic value unless cleared but it is physically located such that the sale of the land to a third party (if possible) is not considered an option. Thus the impact to the grower is the capital value of the lost marginal profit. Added to this would be the cost of the land stewardship obligations.

In all cases the individual does not have the ability to exchange suitable cane land, which cannot be cleared for suitable cane land, which can be cleared. The potential development area is effectively lost to the individual resulting in the loss of the marginal profit and economies of scale. With no demonstrated value to the suitable cane land, which cannot be cleared, the economic impact is the capitalised value of the marginal profit.

The capitalised value for the full 9,811 ha is calculated at \$80.4 million or \$8,195 per ha. The individual growers for the benefit of the community effectively carry this loss in value. The guideline direct cost of re-establishment of vegetation, according to DNRM is in the region of \$7,500 per ha based on \$5 per plant at a plant population of up to 1,500 per ha. This again gives an indication of the value of the land with endangered and of concern vegetation to the community.

Appendix 1
Mackay Sugar Industry Production, Turnover and Price Trends

Year	Sugar million t	Cane million t	Turnover \$ million	Sugar price \$/tonne	Cane Yield t/ha/annum	CCS %
1992	0.87	5.66	264.68	301	54	14.93
1993	0.99	6.88	341.73	345	64	13.88
1994	1.27	8.41	482.56	382	76	14.58
1995	1.14	8.33	423.56	371	75	13.48
1996	1.27	8.96	426.03	335	79	13.87
1997	1.30	9.09	396.09	335	76	14.45
1998	1.16	9.32	412.41	352	77	12.13
1999	1.15	8.40	293.68	255	70	13.54
2000	0.76	5.79	191.53	253	48	12.70
Est 2001	0.90	6.18	301.01	335	51	14.86
Average 92-01	1.08	7.70	353.33	326	67	13.84

Source: CANEGROWERS Mackay

Appendix 2 Case Study 1

Table A2.1 shows the direct costs used for Case Study 1. These are the costs that would be incurred per ha planted and per ha ratooned and per tonne of cane harvested. There would also be additional annual costs due to the development and these are shown as indirect costs. The once off or capital costs for the initial clearing of the land are shown at \$3,000 per ha.

**Table A2.1
Case Study 1 - Cost Assumptions**

DIRECT PLANTING COSTS	\$/ha
Seed cane	75
Fertilizer	474
Weedicide/chemicals	180
Contract	325
FORM	180
Sub-total	1234

DIRECT RATOON COSTS	\$/ha
Fertilizer	340
Weedicide/chemicals	80
FORM	35
Sub-total	455

DIRECT HARVESTING	\$/tonne
Harvesting	7.50
Levies/crop ins.	0.50
Sub-total	8.00

INDIRECT COSTS (Per farm costs)	\$/year
Consumables	200
Accounting	1000
Phone b/charges postage etc	600
Depreciation	2500
Labour	7200
Sub-total	11,500

CAPITAL (once off costs)	\$/ha
Bush clearing	3000

Table A2.2
Case Study 1 - Sugar Cane Development Partial Budget

Assumptions

Prices	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Average
Sugar price	\$	\$306.00	\$306.00	\$306.00	\$306.00	\$306.00	\$306.00	\$306.00
Cane price	\$		\$27.32	\$27.32	\$27.32	\$27.32	\$27.32	\$27.32

Planned areas and yields		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Average
Total area under cane	ha	-	91	91	91	91	91	-
Harvest area	ha	-	91	91	91	91	91	76
New cleared area	ha	91	-	-	-	-	-	-
Plough out/fallow	ha	-	-	-	-	-	91	15
Plant area	ha	91	-	-	-	-	-	15
Ratoon area	ha	-	91	91	91	91	-	
Cane yield / ha	tonnes	-	105	100	95	85	80	93
Total cane	tonnes	-	9,555	9,100	8,645	7,735	7,280	7,053
Average CCS %	tonnes	0.00%	13.70%	13.70%	13.70%	13.70%	13.70%	13.70%

Marginal Income and Costs (\$)

Income		-	261,060	248,628	236,197	211,334	198,903	192,687
Less								
Costs/ha planted	\$1,234	112,294	-	-	-	-	-	18,716
Costs/ha ratooned	\$455	-	41,405	41,405	41,405	41,405	-	27,603
Costs/tonne cut	\$8.00	-	76,440	72,800	69,160	61,880	58,240	56,420
Costs/year		11,500	11,500	11,500	11,500	11,500	11,500	11,500
Marginal profit		-123,794	131,715	122,923	114,132	96,549	129,163	78,448
Costs/ha cleared	\$3,000	273,000	-	-	-	-	-	-

Table A2.2 shows the last five year's average sugar price of \$306 per tonne which at the estimated Commercial Cane Sugar content (CCS) of 13.7% gives a cane price to the grower of \$27.32.

The planned areas and yields are shown with the new cleared area of 91 ha being planted in Year 1 giving a total annual planting cost of \$112,294 at \$1,234 per ha (from Table A2.1). There would be no ratooning costs or harvesting costs in Year 1. There would be the indirect cost of \$11,500 and in Year 1 and the capital or clearing costs of \$273,000 at \$3,000 per ha.

In Year 2 there would be the full 91 ha under cane and this full area would be harvested and ratooned. The yield assumed for the plant crop is 105 tonnes per ha giving a total of 9,550 tonnes. At the price of \$27.32 per tonne this gives an income of \$261,060. At the \$8.00 per tonne harvesting costs the total is \$76,440 for the year and there will be ratooning costs of \$41,405 at \$455 per ha.

Year 3 to 5 would reflect the same situation but at a declining yield and in Year 6 the fourth ratoon is taken off and the area ploughed out and left fallow for planting in the next year. Thus there would be no ratooning costs in this year. From Year 7 the cycle would repeat itself (except for the clearing costs).

In practice this area will be incorporated into the whole farming enterprise and the average of the complete cycle reflects the expected marginal profitability of the area on an annualised basis. Whether development is spread over a number of years or not the annualised marginal profit is still assumed to be the same. This average is shown in the last column.

Appendix 3 Case Study 2

As with Case Study 1 the cost assumptions are shown in Table A3.1 for the direct planting, ratooning and harvesting and the additional indirect costs and clearing costs. The costs are essentially very similar except for the indirect costs that reflect that the magnitude of the area leads to additional labour costs and depreciation that indicated the additional equipment required.

**Table A3.1
Case Study 2 - Cost Assumptions**

DIRECT PLANTING COSTS	\$/ha
Seed cane	75
Fertilizer	474
Weedicide/chemicals	180
Contract	325
FORM	180
Sub-total	1234
DIRECT RATOON COSTS	\$/ha
Fertilizer	340
Weedicide/chemicals	80
FORM	45
Sub-total	465
DIRECT HARVESTING	\$/tonne
Harvesting	7.50
Levies/crop ins.	0.50
Sub-total	8.00
INDIRECT COSTS (Per farm costs)	\$/year
Consumables	250
Fuel	1000
Maint m/veh	1000
Depreciation	10000
Accounting	1000
Phone b/charges postage etc	600
Labour	30000
Sub-total	43,850
CAPITAL (once off costs)	\$/ha
Bush clearing	3000

Table A3.2 shows the areas cleared, planted and ratooned each year and the assumed yield from this area. These are used in conjunction with the costs in Table A3.1 to show the marginal income and costs. The average of the complete cycle is shown and represents the annualised marginal profit for this case study.

Table A3.2
Case Study 2 - Sugar Cane Development Partial Budget

Assumptions

Prices	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Average
Sugar price	\$	\$306.00	\$306.00	\$306.00	\$306.00	\$306.00	\$306.00	\$306.00
Cane price	\$		\$27.32	\$27.32	\$27.32	\$27.32	\$27.32	\$27.32

Planned areas and yields		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Average
Total area under cane	ha	-	191	191	191	191	191	-
Harvest area	ha	-	191	191	191	191	191	159
New cleared area	ha	191	-	-	-	-	-	-
Plough out/fallow	ha	-	-	-	-	-	191	32
Plant area	ha	191	-	-	-	-	-	32
Ratoon area	ha	-	191	191	191	191	-	-
Cane yield / ha	tonnes	-	100	95	90	80	75	88
Total cane	tonnes	-	19,100	18,145	17,190	15,280	14,325	14,007
Average CCS %	tonnes	0.00%	13.70%	13.70%	13.70%	13.70%	13.70%	13.70%

Marginal Income and Costs (\$)

Income		-	521,846	495,754	469,662	417,477	391,385	382,687
Less								
Costs/ha planted	\$1,234	235,694	-	-	-	-	-	39,282
Costs/ha ratooned	\$465	-	88,815	88,815	88,815	88,815	-	59,210
Costs/tonne cut	\$8.00	-	152,800	145,160	137,520	122,240	114,600	112,053
Costs/year		43,850	43,850	43,850	43,850	43,850	43,850	43,850
Marginal profit		-279,544	236,381	217,929	199,477	162,572	232,935	128,292
Costs/ha cleared	\$3,000	573,000	-	-	-	-	-	-

Appendix 4. Case Study 3

The cost assumptions for Case Study 3 are shown in Table A4.1 and as with the other case studies these are applied to the area and yield assumptions in Table A4.2 to calculate the marginal profit. The average marginal profit represents the annualised situation for Case Study 3.

Table A4.1
Case Study 3 - Cost Assumptions

DIRECT PLANTING COSTS	\$/ha
Seed cane	75
Fertilizer	474
Weedicide/chemicals	180
Contract	325
FORM	180
Sub-total	1234

DIRECT RATOON COSTS	\$/ha
Fertilizer	340
Weedicide/chemicals	80
FORM	35
Sub-total	455

DIRECT HARVESTING	\$/tonne
Harvesting	7.50
Levies/crop ins.	0.50
Sub-total	8.00

INDIRECT COSTS (Per farm costs)	\$/year
Consumables	200
Accounting/administration	1,000
Phone b/charges postage etc	600
Depreciation	2,500
Labour	5,000
Sub-total	9,300

CAPITAL (once off costs)	\$/ha
Bush clearing	3000

Table 4.2
Case Study 3 - Sugar Cane Development Partial Budget

Assumptions

Prices	Units	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Average
Sugar price	\$	\$306.00	\$306.00	\$306.00	\$306.00	\$306.00	\$306.00	\$306.00
Cane price	\$		\$27.32	\$27.32	\$27.32	\$27.32	\$27.32	\$27.32

Planned areas and yields		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Average
Total area under cane	ha	-	78	78	78	78	78	-
Harvest area	ha	-	78	78	78	78	78	65
New cleared area	ha	78	-	-	-	-	-	-
Plough out/fallow	ha	-	-	-	-	-	78	78
Plant area	ha	78	-	-	-	-	-	13
Ratoon area	ha	-	78	78	78	78	-	52
Cane yield / ha	tonnes	-	105	100	95	85	80	93
Total cane	tonnes	-	8,190	7,800	7,410	6,630	6,240	6,045
Average CCS %	tonnes	0.00%	13.70%	13.70%	13.70%	13.70%	13.70%	13.70%

Marginal Income and Costs (\$)

Income		-	223,766	213,110	202,455	181,144	170,488	165,160
Less								
Costs/ha planted	\$1,234	96,252	-	-	-	-	-	16,042
Costs/ha ratooned	\$455	-	35,490	35,490	35,490	35,490	-	23,660
Costs/tonne cut	\$8.00	-	65,520	62,400	59,280	53,040	49,920	48,360
Costs/year		9,300	9,300	9,300	9,300	9,300	9,300	9,300
Marginal profit		-	113,456	105,920	98,385	83,314	111,268	67,798
Costs/ha cleared	\$3,000	234,000	-	-	-	-	-	-

Appendix 5
Summary of Cane farm Sales 1999 to 2001

	Sale Area (ha)	Area CPA (ha)	Sale Value \$/ha Cane land	Improv'ts Value \$/ha Cane land	Land Value \$/ha Cane land
Mirani	641.3	409.9	10,235	5,481	4,754
Sarina	257.9	203.7	9,919	7,290	2,629
Mackay Kinchant Dress Circle	385.8	341.8	12,843	9,662	3,182
Mackay North of Pioneer River	491.2	357.8	7,176	3,243	774
Overall total	1776.2	1313.1	10,031	6,240	2,930

Source : DNRM 26 recorded sales 1999 to 2001

: Mackay Sugar Areas Maps

Appendix 6

Sugar Cane Suitability Study

The Department of Primary Industries has carried out sugar cane land suitability studies for the Mackay and the Plane Creek areas. These studies are:-

Plane Creek Sugar Cane Land Suitability Study AK Willis & DE Baker Dept of Primary Industries 1988

Mackay Sugar Cane Land Suitability Study GK Hob & PG Shields Dept of Primary Industries 1985

Land is placed into five classes after considering relevant limitations to production. These limitations are:-

Erosion, Flooding, Salinity, Water Holding Capacity, Nutrient Status, Soil Workability, Stone, Topography, Wetness and Soil Depth.

The classes are as follows

Class 1 – Land suitable with no limitations

Class 2 – Land suitable with slight limitations

Class 3 – Land suitable with moderate limitations

Class 4 – Land marginally suitable with severe limitations

Class 5 – Unsuitable land

The Class 4 limitations are mostly economic whereby it takes additional capital to become suitable to grow sugar cane. Thus it is sensitive to the economics of the sugar industry. The present cane land is on the Classes 1 to 4.