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# The Role of Income Taxation in Natural Resources Management

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It is widely accepted that accelerated depreciation concessions, such as sections 75B and 75D, are a poor means for government to address environmental objectives. This position is further supported by recent information highlighting the limited behavioural effect of this form of intervention. The continued existence of poorly targeted subsidy measures, in the face of mounting evidence of their ineffectual nature, suggests they are an important source of political benefits.

It is further proposed that as assistance to agriculture declines, the political value of 'generic' policies providing economic rents to industry, such as taxation concessions, will increase and potentially impede the development of agricultural-environmental policy.

The further point made is that significant environmental gains will be associated with a greater degree of policy complementarity, not only among elements of the *Income Tax Assessment Act 1936*, but among elements of rural policy generally.

## 1. Introduction

The role of income taxation in natural resource management has received considerable attention by economists. While attention continues to focus narrowly on the accelerated depreciation provisions of Sections 75B and 75D of the *Income Tax Assessment Act 1936*, and on couching such incentives within the broader suite of economic instruments, relatively little attention has focused on the potentially more significant environmental gains to be achieved through reform in other areas of rural policy.

The paper highlights on-going attempts to legitimise sections 75B and 75D within a normative framework, when many would consider them simply as mechanisms for providing politically inspired 'rents' to the farm sector. It is therefore proposed that progress in agricultural-environmental policy development may be associated with an increased level of public debate regarding the unwillingness of government to implement reform in this area. An issue that arises with the application of public choice theory to the problem, is the possibility that deregulation and the declining role

for government in agriculture, may be associated with an element of 'control loss', or the shaping of advice to meet the known preferences of ministers, in rural policy development.

It is also proposed that greater efficiency in natural resource use will be achieved by considering concessions, such as sections 75B and 75D, within the context of rural policy generally, rather than in isolation. Poorly targeted subsidy measures and policy conflicts will serve only to widen the gap between the marginal private and social cost of resource use and to confound industry expectations with respect to when governments will intervene, thereby impeding the development of more comprehensive risk management strategies by Australian farmers.

## 2. Sections 75B and 75D

### 2.1 Background

Sections 75B and 75D of the *Income Tax Assessment Act 1936* provide for accelerated depreciation of investments in water and land care measures by primary producers. Section 75B provides for investments in conveying and conserving water to be depreciated over three years, while section 75D provides for investments in land care measures to be fully depreciated in one year.

To the extent that benefits arise from accelerated depreciation rates that would not be available from depreciation rates based on 'economic life', these concessions can be considered a form of subsidy. Furthermore, given they apply to agricultural inputs, they can be likened to an indirect transaction-based subsidy, with the potential to influence input and output prices and industry adjustment.

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## 2.2 The Effectiveness of Taxation Concessions

Arguments against the use of taxation concessions for achieving environmental objectives have been widely canvassed (BAE 1985; Morris *et al.*; NSW Government; Commonwealth of Australia; ACIL; ESD Working Groups). The Bureau of Agricultural Economics raised concerns about their unintended side effects to do with resources being attracted into agriculture and subsequent environmental and adjustment problems, over twenty years ago (see BAE 1973).

The following quote well summarises the contemporary view (OECD):

... a common theme has been a trend away from using the tax system to promote economic or social objectives, in favour of a neutral tax system, which leaves social and economic policy objectives to be pursued by non-fiscal measures. Many of the reforms have explicitly stressed the goal of neutrality, even if in all OECD countries there remain some intentional non-neutralities. This move away from tax interventionism towards tax neutrality has been taken perhaps because of the growing acceptance among many shades of political opinion that market forces may be a better guide to efficient tax policy than government intervention, so often influenced by the strength of political pressure groups.

Specific criticisms of accelerated depreciation provisions include the following.

- (a) Taxation concessions break the fundamental rule of sustainable agriculture, requiring resources to be priced at their marginal opportunity cost to society and are inconsistent with the polluter-pays principle. Chisholm argues, for example, 'that off-site externalities require a tax, not a subsidy to equate marginal private and social costs' and that for land degradation 'subsidies reduce the private cost of the long-run supply of soil quality, and thus provide an incentive for farmers to adopt more intensive, and potentially more degrading, uses of land'.
- (b) Taxation concessions will only be used by farmers for investments that are privately profitable. These investments will not necessarily coincide

with those that would correct externalities associated with land degradation, or those that society deems most desirable.

- (c) Taxation concessions are of most value to high income farmers. Arguably, much land degradation will be associated with low income farms which will not be addressed through a concession based on taxable income. There may also be an issue of equity related to the fact that low income farmers are unable to access this form of assistance.
- (d) It is generally agreed that correcting 'information failure' by encouraging the adoption of improved management practices and sustainable farming systems is a more appropriate response by government to land degradation. Taxation concessions, on the other hand, only provide an incentive for capital works.
- (e) Providing incentives for capital works may in turn result in farmers treating the symptoms of the more obvious forms of land degradation, rather than causes. Subsidising remedial measures in this way may also provide an incentive for farmers to run down their resource base in the knowledge that concessions will subsequently be available to correct the problem. Taxation concessions may, therefore, undermine efforts being made by other agencies to encourage a more pro-active and preventative approach by farmers to land degradation.
- (f) In relation to land degradation externalities, there is much uncertainty with respect to the nature and significance of these effects. Information is less than comprehensive on the extent and complexity of these problems. This in turn gives rise to an accountability problem. The social benefits of taxation concessions cannot be identified and expenditures cannot be adjusted as required. Furthermore, it is not clear whether the revenue costs of taxation concessions are in fact less than the value of new land care investments (Glau). In other words, the bulk of expenditure attracting concessions may be of a maintenance nature.

Given that these arguments are largely of a theoretical nature, information recently collected by the Australian Bureau of Agricultural and Resource Economics on the use of sections 75B and 75D is particularly

instructive (see ABARE 1992; Mues and Collins; Nelson and Mues; and ABARE, 1994). A key finding from this information is that the majority of farmers who use taxation concessions, would have made their investments without the concession. ABARE (1994) state for example, that:

Of those farmers with eligible expenditure, generally less than a third of broadacre farmers and less than a fifth of dairy farmers indicated that they intended to claim these amounts under sections 75B and 75D. The majority of broadacre and dairy farmers appear to have placed little or no importance on sections 75B and 75D when deciding whether or not to undertake land care related works.

This finding is perhaps not surprising given the low and sometimes negative level of financial incentive provided through these concessions, a factor first analysed by Edwards and subsequently confirmed by Douglas *et al.* (1995). One would expect the limited behavioural effect of sections 75B and 75D, identified by ABARE, to be a finding warranting particular consideration in the current review of these concessions by the Department of Primary Industries and Energy. Given that they can be viewed as simply providing private benefits to high income farmers, it would be difficult for government agencies and associated research bodies to recommend the continuation of these accelerated depreciation provisions on public benefit grounds.

A further important finding from the ABARE data is the link between farmers receiving information from Landcare groups and the adoption of conservation farming practices (Nelson and Mues). While on the one hand taxation concessions have had little influence on the adoption of conservation practices, improved access to information appears to have been significant. It follows that scarce revenues forgone through taxation concessions would produce increased benefits if they were re-directed to facilitate group activity and information transfer.

In response to the deficiencies of taxation concessions, and perhaps in recognition of their likely continuation, the Commonwealth Department of Finance recently raised a series of questions relevant to the current review of sections 75B and 75D. These were whether more effective measures to target the benefit of these incentives to those most in need could be found,

whether cost effective mechanisms could be designed to enable greater monitoring of the cost and impact of taxation incentives and whether consideration should be given to applying the 'beneficiary-pays' principle to programs such as Landcare.

Also relevant to the current review of these taxation concessions are overseas studies that have found that government outlays can be substantially reduced by policies that more closely match government subsidies to the marginal cost of land degradation control (see for example Dumsday and Seitz).

### 2.3 The Alternatives

Ideally it would be desirable if the taxation system were neutral with respect to farm level investment. Alternatives such as tax rebates and credits (see BAE 1985 and Douglas 1991) simply serve to confound the tax system, provide inappropriate incentives, and more importantly, act to impede the development of more efficient, non-tax based systems, for addressing land degradation.

Basically, alternative forms of intervention need to be more closely aligned with the causes of the problem. For example, it has become increasingly accepted that an important cause of land degradation is 'information failure' (Mues and Collins), whereby farmers have been unaware of the effects of various farming practices on the natural resource base. Appropriate responses by government, therefore include research to better understand natural resource systems and information provision to farmers.

The means by which that information is provided, however, can potentially influence the efficiency of investment decisions. Generalised cause, effect and treatment information, for example, may not be as applicable in some areas as others, leading to poor investment choices. This problem may, at least in part, be most efficiently addressed by the introduction of more comprehensive natural resource monitoring systems at the farm level (Epps and Crittenden). Increased levels of information about the status of natural resources and the implied future productivity of farm land, may enable land markets rather than governments to reward farmers for appropriate, private, land care investments.

Externalities associated with land degradation can be addressed through various means depending on their

nature and severity. Land degradation problems associated with broadacre agriculture are infinitely variable in terms of the combinations of problems that exist and their significance. In such an environment a least cost solution to externalities will be to encourage their internalisation through group activity (at least those incurred locally), as is currently done through the Landcare Program. Like taxation concessions, however, grant programs such as Landcare can also lack accountability in the absence of audit procedures that ensure funds are generating public rather than private benefits.

A common argument to ensure such programs address truly social concerns about natural resource use is for greater emphasis to be placed on 'beneficiary-pays' funding principles. This raises the issue of whether social objectives are more likely to be achieved under a program financed from general taxation revenue, some form of environmental levy or through private sponsorship.

More significant non-point source pollution externalities, such as salinity, sedimentation, acidification and phosphate problems, may justify more interventionist approaches (NSW Environment Protection Authority). Despite the current significance of these problems, the ongoing political attraction of poorly targeted subsidy measures delivered through the income taxation system, appears likely to continue to impede policy development in this area.

### **3. Public Choice Considerations**

If it is accepted that accelerated depreciation provisions are largely politically inspired, then closer analysis and increased discussion of the 'political imperative' with respect to Australian agricultural policy is an area possibly in need of closer attention by economists.

#### **3.1 The Hypothesis — Increased 'Control Loss'?**

In an environment of low and declining assistance to agriculture and a declining contribution by the sector to GDP, it is not unreasonable to suggest a reduced future role for government in agriculture. To the extent that political benefits are associated with the provision of economic rents to the farm sector, this necessarily implies that agricultural policy will be a declining source of such benefits in future.

As policies providing political benefits become scarce, their individual political value could be expected to increase, for a period, making it worthwhile for agencies to increase efforts to retain them. This in turn increases the likelihood of 'control loss', or bureaucratic inefficiency, in the form of changing the objectives of policies to maintain their relevance and 'shaping' inquiries and advice to meet the known preferences of ministers (Johnson).

Furthermore, those policy based political benefits most easy to retain, or those policies most likely to endure, may well be those viewed most dogmatically by industry, and those that are generic in nature, not involving preferential treatment of one sector of agriculture over another. Taxation concessions and rural adjustment assistance fit these requirements.

#### **3.2 The Symptoms — Changing Objectives, Internal and Partial Reviews**

**Changing objectives.** Over time, various justifications have been used in relation to accelerated depreciation provisions. Precursors to sections 75B and 75D were introduced in 1952 to increase agricultural production through capital intensification. The then Minister for Commerce and Agriculture stated, for example, that (Glau, p. 10):

The Commonwealth Government... decided to adopt as its policy objective a Commonwealth-wide program of agricultural expansion, not only to meet direct defence requirements, but also to provide food for the growing population, to maintain our capacity to import, and to make our proper contribution to relieving the dollar problem.

While accelerated depreciation was previously available for water and land care expenditure, in 1980 sections 75B and 75D were introduced to provide more 'attractive' depreciation provisions, specifically for water and land care measures. At the time, the Labour Opposition strongly opposed the legislation. Reasons given included no clear objectives being provided for the legislation, the evaluation of the costs and benefits was inadequate, and by favouring agriculture it would introduce distortions in resource allocation. It was further stated that taxation concessions of this nature were likely to have negative environmental impacts, the distribution of benefits would be inequitable and

that the approach lacked accountability and would introduce the potential for tax avoidance.

The Opposition of the time, now in Government, went on to state that (Willis):

There is good reason to ask why such concessions should be given by way of a tax concession. It would be fairer if it were given by way of a subsidy, that is a direct grant legislated for by Parliament and providing the same benefit to all farmers for any given expenditure.

More recent attempts to justify sections 75B and 75D have included reference to 'market failure' (see BAE 1985) and externalities associated with land degradation and broader social concerns to do with the preservation of the natural resource base. Government has also endeavoured to legitimise these subsidies by promoting them as just one element of a suite of measures used to address environmental objectives. While this is in some ways consistent with the contemporary view of matching economic instrument to objective, clearly in this case the mechanism existed well before the objective. Furthermore, such a position is unlikely to be based on empirical analysis of the relative rates of return on public funds from the mix of measures now in place.

Further Government positions with respect to sections 75B and 75D include viewing them as 'useful in providing signals for improved land management to individuals' (DPIE), while the stated objective of the recently introduced investment allowance, applying in part to section 75B, was to enable primary producers to better prepare themselves for drought (Keating). The irony of this latter objective, in light of the recent introduction of the National Drought Policy, is apparent. Furthermore, given that these investment incentives have been in place for almost forty years, it begs the question of when government will deem the increased level of investment to be sufficient, and on what basis.

Finally, given these concessions have minimal behavioural impact, conceivably they may be viewed by a socially-minded government as a second best, but innocuous form of intervention that is effective in conveying the government's 'environmental conscience' and appeasing industry. While this represents a more tenable position than endeavouring to entertain the normative machinations previously discussed,

such a position will be tested by the recent findings of Douglas *et al.* (1995), that providing full deductibility in the year of expenditure does not necessarily maximise private benefits.

A government unable to distinguish its social role from the provision of sectoral rents, may interpret these results as reason to increase private benefits through the introduction of flexible depreciation provisions and arbitrary levels of investment allowance on land care activities.

**Internal partial reviews.** Section 75B and section 75D have been characterised by an on-going series of reviews. Many of these have been undertaken internally by the Department of Primary Industries and Energy, with narrow terms of reference with respect to establishing clear policy objectives and evaluating the range of possible options to achieve those objectives, within an appropriate benefit-cost framework. Parallels can be drawn with recent reviews of the Rural Adjustment Scheme (see Musgrave; and Davenport *et al.*).

Specific reviews of taxation concessions for land care, for example, were undertaken in 1985 (see BAE 1985) and two reviews occurred in 1989; an internal review by DPIE and one by the House of Representatives Standing Committee on Environment, Recreation and the Arts (Commonwealth of Australia). These concessions were also considered in the development of an internal position paper by DPIE on Landcare in 1992 (Department of Primary Industries and Energy) and are currently the subject of a further review being undertaken by ABARE, on behalf of DPIE.

**Discussion.** Given the possibility of 'control loss' due to the particular pressures facing agricultural agencies, it is appropriate that professional economists decouple themselves from institutional strictures and consider means by which pareto-efficient policy development might be achieved. An obvious area for closer consideration is the adequacy of research, and hence information, about the environmental impacts and efficiency losses associated with poorly targeted subsidy measures. While industry remains enamoured with rents that lack transparency, condoning the approach through a lack of research is socially neglectful, particularly when it concerns natural resource use, an area considered by many to be central to the future role of government.

It also stands to reason that industry will be reluctant to relinquish rents that they have 'known and loved', in the absence of alternative offerings. In light of future elections and the possibility they offer for less incremental policy development, it may be timely to undertake an 'environmental audit' of rural policy, as a basis for industry negotiation. While this could take the form of a comprehensive matching of environmental problems with policy measures, at the very least there appears to be a need to review existing elements of rural policy in terms of their objectives, effectiveness and unintended environmental side-effects.

Ultimately, an absence of agricultural-environmental policy development may indicate the need for reform of government agencies overseeing agriculture. Agencies with broader responsibilities, for example, are more likely to base their intervention decisions on the interests of many, rather than few (Kerr, Antle). For interest groups interested in the efficiency of natural resource use in agriculture, agency reform also appears to be a relatively effective way of achieving that objective.

#### **4. Policy Complementarity**

Policy complementarity refers to policies providing consistent signals to farmers about those circumstances in which government will intervene in market processes. Ambiguity in this regard may impede the development of risk management strategies by farmers, adversely effecting natural resource use and resource use efficiency, more generally.

Hyberg states, for example, that institutional factors interact, have important effects on economic agents, and have frequently been overlooked or underestimated in analyses of land degradation. Lutz and Young draw out the practical implications for economists, by stating that:

It may be somewhat idealistic to think that decision making by policy makers is fully objective and equitable, and that they want to know all the consequences of their decisions. But whether that is or is not the case, economists undertaking policy analysis should supply policy makers with integrated analyses which include consideration of the likely environmental effects and impacts of policy decisions on overall welfare and distribution of income.

In the context of the current review of sections 75B and 75D, it is therefore important that these concessions are not viewed in isolation from other elements of rural policy. The signals they provide to farmers may directly or indirectly affect the efficacy of other policy measures.

In the following two sub-sections, rural taxation issues and examples of policy conflicts are briefly identified to highlight the potential for policy reform that could be expected to narrow the gap between the marginal private and social costs of resource use in agriculture.

#### **4.1 Recent Developments in Taxation**

To achieve greater efficiency in agriculture, renewed attention has focused on the extent to which special taxation provisions for primary producers impede the development of risk management strategies by farmers. The body recently assigned the task of investigating these matters is a working group to the Standing Committee for Agriculture and Resources Management, referred to as the On-farm Risk Management Working Group (OFRMWG).

While the issues raised by the OFRMWG are summarised in the remainder of this section, key concerns have been the adequacy of, and relationship between, income averaging, Income Equalisation Deposits and Farm Management Bonds, the treatment of losses, sections 75B and 75D and the taxation provisions for livestock.

**Income Averaging.** Averaging is designed to reduce the additional tax burden imposed on individuals with fluctuating incomes due to the progressive tax system. Recent analysis, however, (see Douglas and Davenport) indicates that income averaging may have undesirable side effects, such as:

- (a) exacerbating financial risk by reducing tax payments in good years and increasing tax payments in bad years;
- (b) reducing the benefit of concessions such as livestock elections, sections 75B, 75D and IEDs by reducing marginal tax rates;
- (c) discouraging the development of diversified investment portfolios due to shading in provisions associated with off-farm income;

- (d) providing wind-fall benefits to high income earners at the expense of low income earners; and
- (e) reducing the efficiency of investment decisions by lagging tax benefits, such as those for conservation works, over five years.

The efforts of the OFRMWG have resulted in a review of income averaging being scheduled for 1995. The review will be undertaken by DPIE and the Commonwealth Treasury.

**Income Equalisation Deposits.** Government currently provides two subsidised deposit schemes to the rural sector which are not provided to other sectors, the IED and Farm Management Bond schemes. The existence of alternative but similar schemes is considered to cause confusion among producers (McKerchar). The on-going changes to the arrangements cause uncertainty, a form of government failure which may contribute to low levels of utilisation.

**Livestock valuation.** Primary producers are able to value natural increase at values below production costs, resulting in tax liability being deferred until stock are sold. A concern is whether this may reduce incentives to destock in response to drought, placing increased pressure on natural resources.

In conjunction with the average cost method of valuation, the system of valuing livestock provides tax deductions for the purchase of livestock. Purchases of other forms of trading stock or capital items do not qualify for similar deductions. An alternative scheme that may overcome the problem is the recently introduced New Zealand National Standard Cost Scheme (Douglas 1995).

**Treatment of losses.** Production losses can be carried forward to offset income earned in future years. The lag in receiving the benefit reduces the value of the benefit, and the size of the benefit varies according to the level of income earned in the year the loss is recouped.

Two methods have been suggested to overcome these difficulties, the first being the introduction of carry-back losses similar to those available in various OECD countries, such as the United States and Britain. Under this system, a farm making a loss is entitled to a refund of taxes paid in the three previous years. The second method would be to calculate refundable tax credits by

applying the progressive tax schedule to negative incomes, i.e. if \$15 000 tax is payable on \$50 000 taxable income, a loss of \$50 000 receives a refundable tax credit of \$15 000 (Douglas 1994).

Both methods would ensure that farmers received the tax benefit to which they are entitled in the loss year when it is most needed. The receipt of tax refunds in low income years may reduce the need for short term assistance, such as that currently provided through the Rural Adjustment Scheme.

## 4.2 Examples of Policy Conflict

Some examples of policy conflicts include the following.

- (a) Farmers may be encouraged through section 75B to install watering points that in turn result in grazing pressures exceeding land capability. This may be particularly problematic in areas such as the rangelands. Not only does this lead to further claims on government for increased adjustment and drought assistance, but farmers may then claim a further taxation deduction through section 75D to correct the degradation problem.

Dams and irrigation infrastructure claimed under section 75B could also contribute to salinity problems. Drainage works to reduce the problem can then be claimed under section 75D, potentially acting as a disincentive to improved on-farm irrigation efficiency.

- (b) The Commonwealth government recently made both IEDs and FMB more attractive and at the same time provided a ten per cent investment allowance on certain inputs. While these schemes provide incentives to farmers to hold 'reserves', it is questionable whether government need encourage the holding of reserves in the form of both cash and fixed capital. For example, taxation concessions on particular inputs may encourage farmers to prematurely commit surplus funds in order to minimise taxation payments. This will, however, be at the cost of losing the flexibility that cash reserves provide for individuals to respond to the unique problems they face during periods of downturn.



Taxation concessions may, therefore, detract from the effectiveness of the IED and FMB schemes, increase the need for government assistance in times of industry downturn and detract from government objectives in relation to effective risk management by farmers and their financial self-reliance.

- (c) With the recently introduced 'productivity focus' of the Rural Adjustment Scheme, as well as providing subsidies through sections 75B and 75D for water and land care investments, the government further subsidises those same investments through interest rate subsidies.

## 5. Conclusions

The main purpose of this paper was to highlight the increased public policy focus that economist may need to adopt to progress rural policy development. The political underpinnings of taxation concessions is an 'old story', but serves as a useful example of policy development being impeded by short term political imperatives in areas fundamental to government, such as the development of socially based agricultural-environmental policy.

It is proposed that policy economists should be considering the adequacy of information available about the environmental impacts of rural policy. If the opportunity for less incremental policy development arose, following an election for example, the question arises as to whether government would be in a position to introduce pareto-efficient policy improvements given the state of knowledge about the environmental effects of current policy settings. This in turn raised the question of whether an environmental audit of rural policy may be appropriate at this time. In the absence of 'agenda-setting' activities such as this, it is proposed that reform of government agencies overseeing agriculture may be required to ensure intervention is based on economy-wide, rather than sectoral benefits.

A further purpose of this paper was to make the point that environmental benefits (or costs) will flow, not only from specific environmental policies such as taxation provisions, but also from rural policy reform more generally, aimed at removing poorly based subsidy measures and policy conflicts.

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