THE PRIVATE PROVISION OF CONSERVATION BENEFITS

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ABSTRACT

The logic that the collective characteristics of nature conservation necessitates provision by governments is not conclusive. Nor are the arguments that support a reliance on private market based incentives to supply land for conservation purposes absolutely compelling. In this paper, it is suggested that different situations involving the supply of nature conservation benefits will be best served by different mixes of private and public provision. This is contradictory to the pattern of provision observed in Australia, where government ownership and management of conserved natural predominates. A move away from this predominance is advocated whereby the private sector would play a greater role in the management of existing National Parks. Furthermore, it is suggested that any expansions in the area of land allocated to nature protection should be made through the purchasing of land by conservation clubs and associations in co-operation with the public sector. To give a dimension of practicability to this proposal, a review of the role played by private conservation organisations in Bavaria is provided.

1. INTRODUCTION

The Pigovian economic logic used to analyse the allocation of resources for nature conservation purposes begins with a demonstration of the failure of a decentralized market system to achieve Pareto efficiency because of the collective characteristics of the benefits provided. It proceeds to the conclusion that government intervention is required in order to escape the failures of the market. In countries where intensive settlement is a relatively recent occurrence, such as Australia, New Zealand and the United States, this logic has paralleled, but not necessarily resulted in, the development of a publicly owned and managed systems of National Parks.

The logic of market failure and government correction is, however, far from straightforward. There exists a counter-logic following in the main from the Coase Theorem that government intervention is unnecessary so long as markets are allowed to operate in the formation and allocation of property rights. Furthermore, it is argued that intervention is also prone to failure because of rent-seeking behaviour. For instance, those with vested interests in any conservation/development decisions to be made in the public sector, including the decision makers themselves, may attempt to manipulate the process to further their private interests. In other areas of government involvement in the economy where intervention had been justified by the market failure argument, this counter logic has been paralleled by government withdrawal through "privatisation". However, this does not appear to have been the case for nature conservation, where a definite growth in government involvement has been witnessed over the last decade.

It may be argued that the continued growth of government involvement in the provision of natural areas for conservation purposes is due to the extent and strength of the market failures evident in that sector and the success of governments in improving the situation. An alternative argument is that conservation lobby groups have been highly successful in their rent-seeking activities.

In this paper, these alternative views are set out in some detail and an assessment of their strengths and weaknesses is made. It is concluded that there can be no generalisation made as to the superiority of either public or private provision of nature conservation areas because different situations will be best served by different ownership/management structures. The observed pattern of ownership and management of nature conservation areas predominantly in the public sector, is therefore questioned as being contradictory to this conclusion. A move away from this predominance is advocated whereby the private sector would play a greater

role in the management of existing National Parks. Furthermore, it is suggested that any expansions in the area of land allocated to nature protection should be made through the purchasing of land by conservation clubs and associations in co-operation with the public sector. To provide some assessment of how practical these alternatives may be, the case of conservation in Bavaria is described and an assessment of the activities of the private entities involved there is made.

2. PRIVATE PROVISION

Natural areas which are set aside for conservation purposes provide benefits, some of which are collective or public goods. In the lexicon of Baumol and Oates (1975), these benefits are undepletable externalities. The main stream of environmental economists (for example, see Randall, 1987) argue that this represents a priori evidence that private provision of conservation areas will not be Pareto efficient. This is largely because of the free-rider problem. A corollary which follows is that some form of communal action, notably supply and management by government, will be required to achieve an improvement in efficiency. Three main arguments have been advanced to contradict this Pigovian-based wisdom. Their common conclusion is that private provision of conservation benefits can be Pareto superior to government provision. However the directions taken by the three arguments to reach that conclusion are very different.

2.1 Property Rights

The first argument in support of private provision has the Coase theorem as its base. It suggests that conservation benefits will be provided to the Pareto efficient level so long as free trade is allowed to proceed under any property rights structure. This logic, however, runs deeper in that it is suggested that the property rights structure itself can be efficiently generated by free trade. Demsetz (1967) argues that "property rights arise when it becomes economic for those affected by externalities to internalize benefits and costs" (p.354) so that "where externality was observed to exist, uncorrected, that must be because the transaction costs of making the correction exceed the net benefits, and therefore the correction itself would be inefficient" (Randall,1978,p.10). Anderson and Hill (1975), attempt to put a practical perspective on this argument by pointing out that "as our air, water and scenery have become increasingly scarce, individuals have attempted to better define their rights to those resources through legal action" (p.167). Hence, in the policy context of nature conservation, the recommendation that follows this logic is for government to do no more than to ensure that the mechanisms for property right definition and enforcement are in place : If the benefits of establishing property rights over conservation goods exceed the costs of doing so, then they

will be established and free trade will there after ensure efficient allocation. If not, then no attempts to intervene should be made by government as such action would necessarily give rise to inefficiencies.

2.2 Anti-Free-Riding

The second argument for private provision is based on a questioning of the free-rider hypothesis. Brubaker (1975) asserts that the free-rider hypothesis has "little empirical scientific basis, and that, in fact, recent available experimental evidence seems much more nearly consistent with some plausible alternatives" (p.147). The alternative suggested by Brubaker - the "Golden Rule" - stresses the role of pre-contract excludability but he also suggests that their exists "positive individual motivation for revealing preferences" (p.151). One of these motivations could be altruism. Bagnoli and Lipman (1992) give support to this reasoning and even suggest that the well-being of others becomes a public good in itself and this creates pressure to expand the supply of public goods. Ironically, their concern is that this circularity could give rise to an over abundance of public goods under private provision. Andrioni (1988) points to another reason for the lack of evidence for the free-rider hypothesis. He suggests that people privately support the provision of public goods, for which they could free-ride, because of the satisfaction or "warm glow" they receive from the action of revelation or giving. Hence, people give donations to charities, according to Andrioni's hypothesis, at least in part, for the satisfaction of giving. Whilst the proponents of this anti-free-rider argument agree that a greater reliance can be placed on private provision of public goods, they do not assert that the level of supply so achieved will be Pareto efficient.

Somewhat allied to this second argument is the logic established by Olson (1965) in his analysis of the formation of clubs. The foundation of Olson's analysis is that the incentives for individuals to participate in a group to provide a collective good become smaller as the group size increases. He defines the group as "latent" when the number of people involved ceases to enable oligopolistic coercion between members. That is, where there are reasons for the formation of a group but where there is no incentive for individuals to either pay their dues or to bear other costs, the group remains unformed or latent. This is clearly the case for many of the benefits of conserved natural areas.

However, Olson recognizes the existence of large member number groups and seeks an explanation. The first he offers is that such groups provide non-collective goods in association with collective goods. Hence, membership of a club may provide members with access to non-collective facilities owned by the club, or to discounts on the purchase of goods from other suppliers. Olson includes the social status and acceptance offered by membership of some clubs

as non-collective goods which encourage membership. He also notes the importance of selective incentives for joining a group such as guilt or the destruction of self-esteem through the snubbing of non-members, but recognizes that this effect will be lessened as group numbers increase. Olson does, however, provide an exception to the impact of large numbers on the social pressure effect. "If the members of a latent group are somehow continuously bombarded with propaganda about the worthiness of the attempt to satisfy the common interest in question, they may perhaps in time develop social pressures not entirely unlike those that can be generated in a face to face group" (p.63).

2.3 Government Failure

The policy conclusion that market failure should be corrected by government intervention is predicated on the assumption that the intervention is capable of achieving a Pareto improvement. The third argument for private provision is that this is unlikely to be the case and the primary reason advanced for such "government failure" is rent seeking (see Bennett, 1991). Special interest groups form to exert political pressure on governments. Their actions can result in improvements in their own welfare but only at a cost to overall social well-being. It is further argued that a politically neutral government bureaucracy cannot be relied upon to guard against such misallocations of resources. The individuals that make up any bureaucracy are subject to incentives for personal advancement that are not necessarily identical to those necessary for community advancement. This lack of commitment to community aims may also be evident in those who are charged with the management of publicly owned facilities. For example, pressures to minimise costs may be ignored in favour of a less stressful work environment.

Because of the pervasive nature of these failures in the actions of government, those advocating private provision (for example, Anderson, 1991) argue that the failures of markets in the provision of public goods are likely to be less severe. This argument is regularly used in tandem with one of the other pro-private provision arguments, so that the extent of market failure can be argued to be limited in comparison.

3. PRIVATE OR PUBLIC

The arguments used to justify a greater emphasis being placed on the private provision of public goods - in this case, conserved natural areas - are predominantly ones of degree and necessarily involve some normative elements. For instance, the government failure argument rests on a weighing-up of the relative failures of the market and government. The anti-free-rider argument rests on the relative incentives of individuals to free-ride or to contribute. The

property rights argument is based on the normative acceptance of the status quo. It is therefore important that these arguments be put into some perspective through a critical assessment.

3.1 Property Rights

The core of the property rights argument lies in the hypothesis that as resources become more scarce, more effort will be applied to the designation of a system of rights that will enable trade to direct those resources to their most highly valued uses. In Anderson and Hill's (1975) study of the American west, this hypothesis is given empirical weight in respect to the land resource. With growing scarcity, the use of barbed wire became feasible as a means of excluding non-paying graziers. Similarly, Anderson (1991) uses the illustration of fishing rights in English streams. However, in both of these examples, exclusion is technically possible. For many of the benefits of nature conservation, there is no possibility for exclusion and hence no possible gain to any private supplier. For instance, there can be no stopping anyone from knowing of the continued existence of a particular plant or animal saved from extinction through the creation of a reserve. Similarly, if a piece of genetic code, required at some stage in the future to prevent the destruction of the world's wheat supply, is preserved in a nature reserve, there can be no exclusion of non-subscribing potential beneficiaries. The prospects for private provision at a Pareto efficient level would thus appear remote. It is worth noting that Anderson and Hill admit that where there is a divergence between private and social costs and benefits "property rights will not always be redefined in accordance with social welfare" (p.168).

This conclusion is further substantiated by the criticisms levelled at the Coase Theorem in a practical context. The assumptions it makes - notably that transaction costs are zero and there are no income effects - are unrealistic (see Randall, 1978, p.10). Transaction costs are likely to be large in the nature conservation case because of the large numbers of beneficiaries involved, especially for benefits such as biodiversity conservation. Given the growing importance of the environment in many peoples' consumption bundles, it may also be unwise to accept the zero income effects assumption.

It is not possible, however, to discard the property rights argument entirely on the basis of this criticism. In many cases, the collective benefits of nature conservation are produced jointly with non-collective goods. Excludable tourism benefits can be generated by conserved natural areas which concurrently produce collective existence and biodiversity maintenance benefits. The property rights approach can in such circumstances yield resource allocations which, whilst not first best Pareto efficient, may be second best outcomes given the flaws in alternative allocation mechanisms. The success of the property rights approach would therefore seem to lie in the ratio of collective to non-collective benefits produced by conserved areas relative to

the ratio of these benefits demanded by the community. If the supply ratio approximates the demand ratio, then private provision may be a reasonable option. It is highly unlikely that such a correspondence is all pervasive. It is more likely that it is the case in some circumstances and any policy process designed to implement private provision would need to include an assessment of the correspondence.

3.2 Anti-Free-Riding

Experimental evidence seems to suggest that free-riding behaviour exists, but that it is far less pervasive than economic theory would predict (Bennett, 1987). The problem this leaves policy makers is that they cannot be sure that the private provision of public goods will even approximate Pareto efficient levels. Even those authors who doubt the strength of the free-rider motive are clear that the preferences revealed for public goods will not be completely accurate. Hence, while public goods would be, and are already, provided privately in the absence of public provision, there remains considerable doubt as to the efficiency characteristics of the outcome. For instance, given the current level of media interest in environmental matters, it could well be that Olson's hypothesis regarding the "continual bombardment with propaganda" working to create sufficient social pressure for a latent group to become active is vindicated. But for how long would a club formed to conserve a natural area last if the media lost interest in the cause? Latency may soon overtake the best intentions of the club's organizers and inefficiency would again prevail as the club's assets were divested. Similarly, in a community where government provision is already a feature of nature conservation, the incentives to free ride may have a much stronger footing than in a community which was well accustomed to private contributions maintaining such goods.

3.3 Government Failure

The degree to which governments fail is to a great extent determined by the structure of the political and bureaucratic processes in place. In some countries, corruption of the political and administrative processes is widely acknowledged, whilst in others, stringent safeguards against such activities are in place. Failure of governments can be put down to a lack of commitment on the parts of politicians and bureaucrats to the goals of the populace as a whole. Mechanisms to ensure such commitment will assist in overcoming the failures. One such mechanism is the free flow of information regarding the actions of government, coupled to a robust and flexible democratic system. Where the populace have ready access to information relating to their government's activities and can act upon that information, commitment is more likely to follow. One form such an information flow can take is benefit-cost analysis, in its extended version to take into account environmental benefits and costs.

At the management level, incentives for government employed managers to act in ways which are consistent with the aims of the community will also vary according to the incentive and monitoring systems in place. In turn, the effectiveness of control systems is generally weakened as the size of any organisation increases. Furthermore, any control system will only be successful if those who operate it are committed to the aims of the community. This again is difficult to ensure if the bureaucracy is remote from the voter, as is generally the case in modern democratic communities, even at the local government level.

4. AN ASSESSMENT

If any single conclusion can be derived from this critique of the pro-private-provision arguments, it is that different situations will demand different solutions. There can be no hard and fast general rule regarding the relative efficiency of private or public provision of conserved natural ecosystems. Rather, each situation requires specific assessment. It is against the spirit of this conclusion that we should observe in Australia, conserved natural areas being predominantly owned and managed by government. It follows from the assessment carried out here that an improvement in resource use efficiency could be achieved if a move away from this predominance were to be made.

Any movement away from the status quo of public predominance in nature protection, as well as requiring a careful assessment of its resource efficiency consequences, would need to be considered in terms of its political and social practicability. It is clear that any such process of change will require shifts in expectations and behaviour on the parts of both government and the private sector. The public sector would become relatively less important and a greater responsibility would be taken by the private sector, notably the clubs and associations which have an interest in nature conservation. Neither may be content with these changes in their status. Politicians and public servants have strong vested interests to preserve by maintaining their role in nature protection. The leaders of conservation organisations would see their high profile lobbying activities reduced in importance and their success would be gauged more on their practical contributions to nature protection. No doubt that both groups will question how practical these changes would be. With this in mind, the following section provides a review of the roles played by both the public and private sectors in nature conservation in Bavaria.

5. NATURE CONSERVATION IN BAVARIA

A cursory assessment of nature conservation in Bavaria may suggest that, such are the differences between it and the Australian situation, little of relevance could be gleaned. Perhaps the most striking of these differences is the role of human activity in nature conservation. Given the centuries of human influence in Europe, "nature" as it has evolved, is now almost everywhere - the exceptions being some forest areas and the inaccessible alpine ares - dependent on a continuation of that influence. Hence the habitats of many species of flora and fauna rely on a continuation of certain pasture management regimes which are no longer financially profitable. What is "natural" in the Australian context is usually defined in terms of an exclusion of human influence.

Despite these differences, there are basic similarities which afford relevance. These similarities centre on the ubiquitous problems associated with the mechanisms used by societies to make choices between alternative uses of land. Hence, despite the differences in terms of what is regarded as nature conservation, decisions regarding how much land should be set aside for conservation and how this land is subsequently managed are made in both cases. It is, therefore, the different approach taken in Bavaria to land use decisions where nature protection is involved, that is of relevance to the Australian context. The basic elements of the Bavarian approach are outlined in the next sub-sections.

5.1 Land Allocation for Conservation in Bavaria - Government Action (1.)

The allocation of land in Bavaria is heavily controlled by the Bavarian State Government. At one level, a highly specific zoning system permits land owners only a tightly restricted array of potential uses. To have the zoning classification changed for a specific purpose, an owner must submit to a variety of clearing procedures. For large projects which have extensive impacts, a "*Raumordnungsverfahren*", which follows the line of an environmental impact assessment, *is* required. At a second level, the uses of land are restricted through the operation of laws relating to such matters as environmental pollution.

Two classifications of land specifically target goals of nature protection (2):

(i) *Naturschutzgebiet* (Nature Protection Area); and,
(ii) *Nationalpark* (National Park).

The aim of a *Naturschutzgebiet (NSG) is to main*tain a specific ecosystem in its current state because of its particular status as a habitat f . . plants and animals or its natural beauty. Once designated as a NSG, an area, no matter who owns it, is subject to a decree which sets out the land use practices which are compatible with its status and hence permitted. A decree may limit the scale and intensity of agriculture (for instance, fertilizer application may be limited) or even make specific requirements of land owners in terms of their day to day land management practices (for instance, the dates between which the mowing of pasture for silage is permitted may be specified).

The *Nationalpark* (NP) designation is given to areas of particular environmental significance, but the aims of these areas are broader than those of the NSGs. NPs - of which there are two in Bavaria, *Nationalpark Berchtesgaden* and *Nationalpark Bayerischer Wald* - are intended for nature protection but also for research and for recreation. Ownership of the existing NPs is by the government, but the legislation that provides for NPs does not exclude the possibility of privately owned land being designated as a NP. Some land within *NP Berchtesgaden* is under perpetual lease to farmers who continue to graze the land, although under tightly controlled conditions.

As of September 1993, the total area of NSGs in Bavaria was 138,565 ha, making up 1.96% of the total land area. The two NPs accounted for 34,000 ha (0.48%).

The private ownership of land designated as NSG by government legislation has financial implications for the government. Whilst some of the opportunity costs of the restricted land use practices allowed by the NSG decrees is deemed by the government to be the "social responsibility" of the land owner, heavy compensation payments are also made to those affected. In addition, the government is also obliged to pay some costs of landscape management in the NSG, especially in cases where the private owner ceases to farm an area.

The government is also involved in the purchasing of land for nature protection purposes. Two sources of funds are used for this purpose:

(i) The *Naturschutzfond* (Nature protection fund); and,
(ii) The environment ministry budget.

Whilst the second source is self explanatory, the first deserves special mention. The *Naturschutzfond (NSF)* is a capital fund of approximately DM 25m established in the mid 1980's and held in investments by the government. The yearly income of the fund, together with any other funds contributed by private sources, is applied to the purpose of purchasing

land for nature protection purposes. In 1992, the NSF contributed DM 665,000 for land acquisition and this figure is projected to be over DM 2m in 1993. In 1992, DM 3.1m was spent directly from the Ministry budget on land purchases.

The manner in which these funds are applied to land acquisition for nature protection is of particular interest as it involves the close interaction of the government with local councils and with the private sector. The latter form of co-operation will be considered in some detail in the next sub-section. Co-operation between the government and local councils (the *Landkreise*) takes the form of the councils submitting their proposals for purchasing land for conservation purposes to the government. Then, following a process of approval, the government assists the councils in their purchases by contributing on average 50% of the price paid. Areas which are deemed to be of special significance may attract up to 66% funding by the government.

5.2 Land Allocation for Conservation in Bavaria - Private Action

Private initiatives for nature protection in Bavaria are wide ranging and involve varying degrees of co-operation with the government.

Most closely associated with the government are those private activities which complement the work being undertaken in the NPs. Although only at an early stage of development, park managers have sought to use voluntary labour for specific tasks in their parks. On occasion, some work by "volunteers" has been paid for by private corporation sponsorship. At a more formal level, there exists a non-profit, private organisation called the Federation of Nature and National Parks of Europe (FNNPE). The German section of the FNNPE aims to coordinate the management activities of the various NPs (which are set up under individual - and different - legislation, even within each state) and to facilitate private sponsorship of NP projects. The latter aim has come about because the enabling legislation for the NPs precludes the direct sponsoring of the NPs. Hence the FNNPE acts as a clearing house for commercial sponsoring. For example, the computer systems at *NP Berchtesgaden* have been provided by IBM and this is given recognition in the visitor centre at the Park.

The *Deutscher Alpenverein* (German Alpine Club or DAV) also works in close association with the government but in a very different way. The DAV is a large organisation with over half a million members (throughout the whole of Germany) and an annual fee revenue base of DM 14m. It has a wide array of interests which include the teaching of climbing skills, alpine rescue services and lobbying the government on the whole spectrum of environmental issues. Of particular note, however, are the DAV's interests in the management of the alpine regions.

These interests take two forms - the construction and maintenance of paths and signage in alpine areas (which are owned largely by the government) and the operation of a network of alpine huts (which are owned by the DAV). The work involved in pursuing these interests is undertaken by DAV members on a voluntary basis. The exception to this is the provision of hospitality services at the huts - here, a "hut-server" is granted the right to sell food and beverages at the hut by the DAV in return for the collection of the accommodation fee charged and the general maintenance of the buildings. The operation of the huts is strictly monitored by the government, especially in terms of their environmental impacts. A number of huts have been closed as a result of government stipulated waste water quality requirements and the DAV's insufficient finances to improve the facilities of all their huts within a short time period.

Other nature protection associations in Bavaria have a more direct interest in the provision of land specifically for nature protection. The most important of these are the *Bund Naturschutz in Bayern* (Bavarian Nature Protection Association - the BN) and the *Landesbund für Vogelschutz in Bayern* E.V. *-Verband für Arten- und Biotopschutz* (Bavarian Bird Protection Society - the LBV). There are 105,000 members of the BN in Bavaria, with an annual membership fee revenue base of DM 4.5m but with total funds available for spending approaching DM 10m (including donations, bequests and fines directed by local courts to the BN). The LBV has about 35,000 members and 12,000 "sponsors" who contribute often more than the membership fee but do not wish to be members. Its membership fee revenue is DM 1.6m with other sources of funds bringing the total funds available for spending to DM 3.5m.

Both the BN and the LBV devote funds to the purchase of land for nature protection purposes. In this they are assisted by the government, which as with the local councils, provides funding for, on average, half the purchase price. The BN currently owns approximately 1,100 ha and leases a further 700 ha, allocating in the order of DM 600,000 to DM 800,000 per annum to the task. The LBV has land holdings of about 800 ha plus a further 800 ha of leases and is currently devoting approximately DM 650,000 on an annual basis to land acquisition.

The management emphasis given to their lands by the two associations is different. In some of its reserves the LBV encourages visitation, not only by its members but also by the general public, through the provision of guided tours and/or information boards. Examples of this type of management are found at the *Chiemsee* and *Altmühlsee* reserves. However, for other reserves where the ecology is more fragile, visitation is discouraged. The BN manages its land without encouraging visitors. Both organisations rely on members to provide voluntary labour for management tasks, although some of the non-labour costs of management are subsidised by the government. The LBV in some cases leases back its lands to farmers who contract to manage the land in a manner which is compatible with the LBV's goals. Where government

assistance has been used to part fund the land acquisition, an agreement is entered into by the organisation to devote the land to nature protection and for the land to revert to government ownership should the association cease to exist.

It should also be noted that the DAV owns land which is used for conservation purposes. In fact, the DAV is the largest private land owner in Austria, through its holding of 30,000 ha adjacent to *NP Hohe Tauern* in the Austrian Alps. This situation has arisen through the long history of Austrian Alps. This situation has arisen through the long history of German-Austrian alpine conservation. However, the DAV has granted the managerial control of their lands to the Austrian NP authorities.

6. POTENTIAL AUSTRALIAN APPLICATIONS

The role of the Bavarian Government in the allocation of land to nature protection is clearly highly significant. Further interventions at the Federal level and indeed at the European Community level add to the strength of government involvement. It is, however, not the role of this section of the paper to establish the efficacy or otherwise of this involvement (3). What is relevant is the observation that private sector organisations have demonstrated an ability to be involved in a wide variety of nature protection activities. These range from activities which involve the provision of non-collective goods associated with conservation (the DAV's hut accommodation scheme) right through to the supply of pure collective nature protection goods (the BN's purchasing of "set-aside" land). Free-riding is shown to be significantly less than absolute by these activities.

The Bavarian example demonstrates that the movement away from the public dominated provision of nature protection evident in Australia advocated in Section 4 of this paper is a practical possibility. The remainder of this paper is therefore devoted to the specification of ways in which greater private sector involvement may be achieved in the Australian context. It should be stressed however that the various ways forward suggested are general proposals and that there implementation would need to be carefully considered on a case by case basis to ensure that improvements in resource allocation efficiency are to be achieved.

6.1 The Management of Existing National Parks

Any assessment of the efficiency of the current allocation of land to nature conservation purposes is difficult because of the collective properties of many of the benefits arising. It is frequently left to governments, despite their limitations in this respect, to decide what is the

efficient level of provision, perhaps with the assistance of inputs from, amongst others, economists. On this basis, it be assumed that the current network of National Parks is a core of land that is in its highest marginal value use and is hence efficiently allocated.

This allocative decision making by government does not however preclude the private sector from any further involvement. In fact the continued management of the National Parks to supply the collective goods they are purchased to provide, offers many opportunities for private sector involvement. This approach parallels that taken in the pollution abatement literature (see Tietenberg 1992, p368) where government decisions regarding the efficient level of pollution are separated from the private decisions regarding the most cost-effective way of achieving that level.

This private sector involvement could take a wide variety of forms. At the most elementary level, it could involve the skills anding park managers. This could be achieved through the cooperation of managers with park users' associations set up specifically for each park. A park manager may set up a specific project for volunteers to undertake - say the design and construction of a new walking trail - and oversee the completion of the task to ensure compliance with the overall conservation strategy of the park. The park association may organise its members to do the work in a short time period as a "holiday" (a new dimension of "eco-tourism") or over a longer sequence of "working bees".

A further dimension of this type of public/private co-operation could involve the existing management and the associations' members in a search for "eco-sponsors" to help, for instance, finance the equipment and materiel required for the park associations' projects.

At another level, the management of specific facilities within parks could be taken on by the private sector. This could involve the auctioning of rights to operate non-collective facilities to the profit-based sector (for instance, commercial accommodation services - such as camping grounds or even hotels/guest houses within a park) or the allocation of rights to a non-profit nature protection association in cases where facilities provide a greater proportion of collective benefits (for instance, walking trails and huts).

At the extreme of this type of involvement would be the complete hand-over of the management responsibilities for an existing National Park to the private sector. How practical such an approach would be, would need to be assessed only after considerable experience in implementing the lower levels of private sector involvement had been gained.

It should be reiterated that with all of these levels of private sector involvement, the

government would maintain ownership rights to the National Parks, be responsible for the overall land use plan for those Parks and monitor compliance with that plan. In this respect, the land allocation function remains with the public sector.

6.2 Extensions to the Stock of Nature Protection Areas

The private sector can also be actively involved in the establishment of new nature conservation areas and there are ways by which the government might encourage such participation. Principal amongst these is a redirection of the funds allocated to conservation organisations from general revenue. Currently conservation organisations receive lump sum grants from the government, to use at their own discretion. The predominant use chosen is lobbying. A more practical role for these groups would be encouraged by the tying of the government grants to land purchases for nature protection. The scheme could work as follows: The association submits to the government a proposal to purchase an area of land that it has deemed worthy of protection; if the government agrees with the group's assessment, it allocates funds to supplement those raised for the purchase by the group itself - either by membership fees or other sources such as donations or sponsorships. In this way, the association makes a contribution not only to the funding of nature protection but also to the selection of areas to be conserved. In a sense, the scheme adds a little market discipline to the process of adding to the stock of nature protection areas.

Ownership of the land would be vested with the organisation but specific covenants could be included on the title to ensure the use of the land as a nature protection area. Management of the new areas would be the responsibility of their owners and this would bring another dimension into the activities of conservation groups.

6.3 The Success of Clubs

Much of what has been discussed in the previous two sub-sections places a good deal of emphasis on the successful operation of nature protection clubs and associations. It is therefore relevant here to point out a number of characteristics of the successful Bavarian associations which could be used by Australian groups faced with the challenge of a more active future role in practical nature conservation.

Possibly the most important factor in ensuring the success of the Bavarian groups is their common organisational structure. This involves a relatively small central co-ordinating headquarters with a host of sub-groups being the focus of most activity. Hence the DAV is made up of 320 *Sektionen* (Sections), each being responsible for a specific region of the Alps.

Likewise, the BN is organised into *Kreis* groups - each centred on a particular *Landkreis* or local government area. These groups may be anything from 1,500 to 12,000 members strong, but they are broken down again into *Orts* groups which are based at the suburb, town or village level. Here, membership may be between 5 and 300 people. The LBV is similarly split up into 350 groups, varying in size from 10 to 3,300.

This common structure complies neatly with the notions of Olson (1960) who pointed out the difficulties of motivating a large group. The Bavarian organisations operate at the level of a small group despite their overall large size. Activities are centred on the small group - DAV members have responsibility for specific huts and tracks; LBV and BN members contribute funds to the purchase of a protected area in their own neighbourhood and recognise their responsibilities in caring for that area. Membership drives are based at the local, personal level and holding existing members in such small groups likewise becomes a personal matter, with considerable peer group pressure being available.

The DAV in particular encourages membership through the co-provision of collective and non-collective goods. Members are afforded access to the club's network of alpine huts at special rates and the club also provides mountaineering schools for its members. The BN and LBV are involved either directly or indirectly through their national associations with the sale of merchandise such as tee-shirts to their members. As well as raising funds, such merchandising encourages membership through the linkage of private goods with the collective good provision aims of the club.

The practical focus of the LBV's land purchasing programme has been used as a means of raising donations. A specific fund - called the *Arche Noah Fonds* (Noah's Arch Fund) - has been set up so that individual donors can know the purpose to which their money is to be put. The promotion of the Fund is based on the provision of details of specific areas which are targeted for purchase. The LBV also uses its practical focus to encourage membership amongst those in the community who have a more conservative attitude to nature protection and do not wish to support more radical groups.

Whilst these techniques have assisted the various clubs to participate actively in nature protection, it should not be concluded that they are sufficiently successful in mobilizing private support for conservation that public action is redundant. To put their success in some perspective, the BN in Bavaria has been able to recruit about 2% of the population whilst the German motoring association - the ADAC - commands a membership ratio of about 25%.

7. CONCLUSION

It has been argued in this paper that there can be no absolute policy position when the choice between private or public provision of nature conservation reserves is considered. It is suggested that a mixed system, which takes advantage of the strengths of private provision whilst recognising the weaknesses it has will be preferred to one dominated by either public or private provision. Because the strengths and weaknesses of private provision depend on the particular circumstances of each case, the optimal mixture of private and public will need to be considered carefully on a case by case basis. This assessment will involve the identification of potential improvements in resource allocation resulting from suggested changes in policy.

One of the aims addressed in this paper has been to put forward some of these suggested changes. Many of the suggestions made involve an increase in the role played by nature protection based clubs and associations. The Bavarian case study provided is designed to illustrate that such clubs and associations have the potential to play an active role in the provision of nature protection goods and services in the Australian context.

To implement the changes suggested in this paper will require a significant shift in the expectations and actions of both the private and public sectors. The public sector suppliers of nature protection goods will need to abdicate some of their current duties and responsibilities and will have to re-orientate others. The private sector - especially the clubs and associations - will encounter new and more practical dimensions in their work. Some ways in which this challenge has been met by the Bavarian associations have been noted in an attempt to demonstrate that the suggestions put forward are practical.

END NOTES

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1. Information provided in this section is derived from unpublished sources within the *Bayerisches Staatsministerium für Landesentwicklung und Umweltfragen.*

2. The classifications and their legislative basis are set out in *Bayerisches Staatsministerium für Landesentwicklung und Umweltfragen* (1990).

3. It is difficult to avoid the observation that government inefficiency must be suspected when one arm of government subsidises agricultural commodity prices to encourage farming whilst another arm of government pays farmers to stop producing so that nature can be protected.

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