

Policy Options for Promoting Public Good Conservation

Nature of the problem

Public good conservation or supply is a concern for governments because markets based on private interests alone tend to result in an under-supply of these goods. The source of the market failure is that those who bear the costs of providing these public goods aren't able to fully capture all the benefits derived from them.

For example, a landholder will make a decision about clearing a block of remnant vegetation on the basis of the benefits they expect to receive and the expected costs. However, from society's perspective remnant vegetation should be conserved where the value of the net benefit from its' maintenance, which includes benefits that may not accrue to the landholder, are greater than the net benefit from clearing it. Unless the landholder has some financial incentive to take these wider benefits into account, the landholder and society as a whole are likely to have very different views about the amount of remnant vegetation that they would want conserved.

Government response

In the presence of market failure, a more efficient public policy would be to construct institutional arrangements such that market participants face the full marginal costs and benefits of their resource use where it is cost effective to do so¹. Unless the incentives facing resource users are changed, it's likely the public good will be under-supplied. Further, the form of intervention chosen should be the one that provides for the greatest increase in social welfare.

The form of intervention chosen dictates who bears the cost of supplying public goods. Some instruments impose the costs on the resource user. Other policy approaches make the broader community pay through government expenditures.

Conditions for effective and efficient use of alternative policy approaches

Three policies which are well suited to encouraging resource users to take the external effects of their resource use into account in their decision making are taxes (or charges), subsidies (or grants), and tradeable quotas.

Where resource use generates negative externalities, **taxes** for resource use can be used to make the marginal private costs of resource use equal to the marginal social costs. Individuals' resource use decisions would then be expected to be consistent with socially optimal outcomes.

In order to lead to socially optimal resource use, the tax should reflect the marginal external cost to society from the use of the resource. For example, emission taxes

¹ The benefits (costs) from a small increase in resource use are called the marginal benefits (costs). The level of resource use that maximises economic benefits is generally where the marginal benefit equals the marginal cost.

should reflect the marginal cost of damage from emissions in order to lead to the efficient level of emissions. However, setting taxes to reflect the marginal cost of damage may involve potentially large information costs.

For taxes to be effective, it must be feasible and cost effective to identify those responsible for the polluting activity, measure the marginal external costs of their actions and enforce payment. Hence, taxes are poorly suited to diffuse-source damage.

When a tax on resource use is the chosen policy instrument, the costs of a change in resource use or management are borne by the resource users.

As an alternative to taxes, **subsidies** can be offered to resource users for activities that are known to address environmental or resource use problems. A well designed subsidy would be at a level reflecting the marginal benefits of resource use or management that do not accrue to the resource user. In this regard, it shares many of the information costs of taxes.

In contrast with taxes for resource use, it's likely to be less onerous to identify those eligible for the subsidy since they would be expected to come forward to lodge their claim. Hence, the monitoring and enforcement costs of a subsidy are likely to be smaller than for a comparable tax.

Where subsidies are used, the broader community bears a portion of the costs of changing to less damaging resource uses or management practices through a matching increase in the tax burden.

The basic idea with **tradeable quota or permit schemes** is to allocate permits for a specified amount of social damage to a common resource, as determined by the government, and make these permits tradeable. Where the aggregate quantity of permits restricts activity, the permits will be traded at a positive price. Resource users will choose whether it's more profitable to buy permits or reduce the level of social damage arising from their resource use. Buyers of permits will be those firms for whom it is relatively costly to reduce social damage associated with their resource use. Sellers will be those firms for whom the cost of abatement is relatively low.

Marketable permits need a legal structure to define the property rights to trade permits and to ensure the rights are enforceable. It must also be possible to cost effectively monitor the level of social damage caused by each resource user making this type of instrument poorly suited to diffuse-source damage.

Tradeable permits are well suited to problems where the relationship between emissions and social damage is the same regardless of where the emissions occur. However, where the spatial location of emissions matters the permit can no longer be considered a single good to be traded. In these cases, variants of tradeable permit schemes may be preferred. For example, separate schemes may be established in different regions, possibly with the opportunity for interregional trade at predetermined conversion rates. However, this adds to the information and/or transaction costs of this general policy approach.

With tradeable permits the marginal cost of reducing the level of social damage to the aggregate level permitted is borne by resource users. The method chosen for allocating permits also affects wealth.

The potential to use these three options, taxes, subsidies and tradeable quotas, needs to be evaluated against other policy alternatives such as regulation or financial enforcement incentives. However, each of these also have strengths in some situations and shortcomings in others. For example, in order to deliver an efficient outcome regulatory approaches need to be based on sound information on the marginal costs and benefits of resource for the array of resource users. This information requirement, along with the costs of administration, monitoring and enforcement, will be a key factor influencing the relative efficiency of alternative policy approaches.

Australian Bureau of Agricultural and Resource Economics
July 2000