

**Department of the Environment, Water,
Heritage and the Arts**

Assessing Policy Instruments

February 2008

Jeremy Thorpe
Partner, Economics and Strategy

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Abstract

The first step in the development of an effective heritage-focused policy response is a clear understanding of the 'market failures' (i.e. public goods, information asymmetries and negative externalities) that are generating less than optimal heritage outcomes. Such a clear understanding is necessary in order to develop policy instruments that focus on correcting the market failures (i.e. information asymmetries, public goods and negative externalities).

Once a range of potential policy responses have been identified it is necessary to make judgements as to which options are most beneficial. While a full benefit-cost analysis (BCA) for each policy instrument will provide a robust means of making such a decision, in practice a more pragmatic and cost-effective such as a multi-criteria assessment (MCA) provides a transparent process for making such decisions.

1 Introduction

While some saw the Productivity Commission's economics-underpinned review of heritage conservation practices and policies¹ as a somewhat uncomfortable intrusion of economics into the heritage conservation debate, the use of economics to aid decision-making in heritage contexts is far from new.²

One of the ongoing challenges in heritage policy development and appraisal is that heritage conservation practices and policy development, by their very nature, tend to be financially constrained, and so, the use of economics as a tool tends to focus on 'what's do-able', rather than 'best practice'.

While full support needs to be given to integrating best practice economic evaluation tools (e.g. comprehensive benefit-cost analysis³) into decision-making processes, there is also room to acknowledge that there is some benefit in developing robust techniques that can be used in this imperfect environment to better aid the analysis of policy instruments and implementation options.

This paper takes a step or two towards this goal.⁴

¹ Productivity Commission 2006, *Conservation of Australia's Historic Heritage Places*, Report No. 37, Canberra.

² See, for example, the discussion in: Christian Ost and Nathalie van Droogenbroeck 1998, *Report on Economics of Conservation: An appraisal of Theories, principles and methods*, ICOMOS International Economics Committee, December, available at <http://www.international.icomos.org/publications/economics98.htm>.

³ For a discussion of such tools see 'Cost Benefit Analysis and the Value of Heritage', a paper presented to the October 2007 Heritage Division Economics Workshop by Professor Jeff Bennett.

⁴ Thanks is provided to the Heritage Chairs and Officials of Australia and New Zealand for permission to make use of pre-existing works in the preparation of this paper.

2 A 'market failure' framework as an initial screening tool

2.1 Understanding the 'problem'

Economics provides a common conceptual framework for analysing problems surrounding the protection of heritage; the market failure.

Market failures exist when there is a divergence between the marginal social costs and benefits and the marginal private costs and benefits of investing in conservation. In the presence of this divergence, there is a *prima facie* case for government intervention.

There are three types of market failures relevant to heritage: public goods; information asymmetries; and externalities. These are discussed in turn.

Public goods

A public good is a good that exhibits two particular features:

- 'non-excludability' — this means that people cannot be excluded from deriving a benefit from the good (or that the costs of doing so are prohibitive); and
- 'non-rivalry in consumption' — this means that the consumption of the good by one individual does not limit consumption by others (i.e. there is no scarcity).

These properties significantly limit the incentive for private providers to supply a public good, resulting in an undersupply or no supply at all.

Deciding whether something is a public good is not straightforward. Non-excludability is a function of technological, social and cultural constraints. For instance, broadcast television was once a public good, but with the advent of encryption technology, excludability became possible (allowing the development of satellite pay television, a club good⁵). Similarly, non-rivalry may be true up to some point, at which point congestion results in rivalrous consumption. This is true of things like roads, airspace and radio spectrum. The result is that there is not a clear distinction between public goods and private goods, but a smooth continuum.

⁵ The effect of technology is not one-sided. For instance, the discovery of methods of breaking encryption means that satellite television is once again non-excludable, but non-excludability can in turn be restored by legal protections.

In practice, 'pure' public goods are relatively rare. A typical example is national defence — defending the country for one person defends it for everyone, and one person's 'consumption' of defence does not reduce the 'amount' available to others. Other examples include public lighthouses, information goods and environmental goods such as clear air and water.

More common are goods that exhibit only non-rivalry (club goods) or only non-excludability (common goods), or exhibit these characteristics to a limited extent. An example of such a good would be a national park, since some of the benefits (e.g. recreation use benefits) are excludable, while others (e.g. carbon-dioxide absorption) are not, and the park is only non-rival up to a point.

Public goods result in market failure because of what is termed the 'free rider' problem. This is where a consumer can enjoy goods to which they have not contributed. This results in a market failure because the free-riding consumer places a certain value on the good, but the producer has no way of capturing this value and so will under-produce the good.

This concept of the public good can be applied to heritage. Some aspects of the consumption of heritage are excludable, have a scarcity value, or both. For 'use benefits', where some degree of physical access or proximity is required to enjoy heritage, then it is likely that consumers can be excluded by restricting access (e.g. historic places with a gate entry fee, or privately occupied historic homes). These places will also likely exhibit rivalrous consumption (at least once congestion limits are reached).

Other aspects of heritage behave differently. Individuals also derive 'non-use benefits' from heritage, such as existence benefits — the knowledge that the heritage item exists and is being conserved, as well as the contribution that the particular heritage item makes to the overall cultural and architectural identity of a community. In this case, the loss of one particular place would lower the overall value of the heritage or cultural identity of an area. There is no feasible way of preventing people from benefiting from this knowledge, while at the same time such benefits are non-rivalrous.

Even in relation to use benefits, it is sometimes very difficult for private owners to exclude consumption. For instance, it is difficult to prevent neighbours from enjoying the visual amenity of an historic home.

The presence of non-excludability and non-rivalry characteristics for heritage goods makes it difficult for private providers to operate in the market. While owners of heritage places may be able to recoup a proportion of their investment in the property through charging admission or entry fees (thereby capturing 'use' benefits), it is significantly more difficult for owners to charge for non-use benefits because consumers are able to free ride in these instances. For example, a person living in a non-heritage property located in a heritage precinct may nevertheless benefit from the heritage context in which their property sits.

The best way of overcoming market failure caused by public goods is to distribute some of the benefits received by free riders to producers.

Depending on the good, it might be relatively easy to turn free riders into paying consumers; for instance, for use benefits, the addition of a gate and an entry fee will be effective.

In other cases it may be difficult or impossible; for instance, attempting to charge people for the knowledge that historic heritage exists and is being conserved.

Where benefits cannot be captured directly, there may be a role for government in capturing those benefits.

Information asymmetries

In order to achieve an efficient outcome, markets rely on all parties having sufficient (but not necessarily perfect) information to make decisions in their best interests. If the transaction costs of obtaining information for either buyer or sellers in the market are prohibitive, it is likely that no exchange will occur.

In other cases, information is not just imperfect, but is asymmetrical. Information asymmetries occur when one party in the market, usually the buyer, does not have sufficient information about the good they are considering purchasing, or the actions of the seller, to make a decision in their best interest. The information asymmetry problem creates a situation of 'adverse selection'.

Adverse selection occurs when a buyer is not able to differentiate between high quality and low quality goods in the market at the time of purchase, and perhaps also not until a significant period of time after purchase. In the presence of this uncertainty, high quality products can be driven out of the market.⁶ At the extreme, only the lowest quality products will be sold, and all higher quality products will be removed from the market.

Adverse selection is most common for those products where it is difficult for consumers to ascertain quality at the time of purchase (and even for some period after purchase), and they do not have sufficient prior experience on which to base their decision.

There are a number of characteristics of heritage places that increase the risk of adverse selection in the market for heritage places:

- heritage is a difficult attribute to define in any absolute way (and is often related to tastes and values), and as such can also be difficult to identify and value within a good, such as a home. For instance, a purchaser of a home may be informed that the home has (or does not have) heritage value, but it may be relatively difficult to assess this claim; and

⁶ G. Akerlof 1970, 'The market for 'lemons': quality uncertainty and the market mechanism', *Quarterly Journal of Economics*, August 1970, Vol. 84, pp. 488–500.

- properties tend to be large, one-off or low frequency investments where the purchaser cannot rely on significant previous personal experience to determine the quality of the good.

As a result, adverse selection may manifest itself in a number of different ways — because of the difficulty in determining the true value of a heritage property, a person:

- who has conserved the heritage characteristics of the property may not be able to fully recoup their investment because the market may not be able to fully distinguish between higher quality and lower quality heritage properties. Thus, if an investor has an opportunity to invest in conserving or upgrading a heritage home, but has limited ability to signal the quality of this property over and above others in the market, the investment is less likely to take place; and
- who wishes to sell, for development, a property with little apparent heritage value may have to discount their property to account for the risk that a development application will raise heritage issues.

Adverse selection appears to be most relevant to residential heritage properties where investors may wish to purchase a residence with a heritage component, but have difficulty in assessing and comparing the relative value of the different heritage attributes of the available properties:

- It is difficult to determine, without incurring significant costs, the validity of heritage claims on properties. The costs of such inquiries are generally beyond the financial capacity of individual personal buyers.
- While listing of heritage properties does provide some signal to purchases, the prevalence of heritage listing in many jurisdictions reduces this value (as listing does not provide a signal of quality between listed properties).

Externalities

Externalities are those benefits (or costs) that are consumed by (or incurred by) third parties outside of the market.⁷ As such, these benefits or costs are not accounted for in the market demand-supply decision, and can lead to a potential under-supply or over-supply in the market.

In the presence of positive externalities, the market will supply a lower level of the good than would be socially optimal. Consumer demand will reflect the private benefit a consumer receives, but not the additional social benefit that might result from consumption or production of the

⁷ The concept of externalities is also closely linked to public goods; since third parties cannot be excluded from enjoying a good, they are able to extract benefits that are not reflected in market decisions (i.e. positive externalities).

good. If these third-party benefits were taken into account, consumers would be willing to pay more and a higher level of the good would be produced. Conversely, negative externalities will result in the marketing oversupplying the good, as supply will reflect private costs to producers, but not additional costs that result from production or consumption of a good.

In the case of heritage, there are privately captured benefits of owning a heritage place, and investing in heritage conservation, such as the ability to charge the public for access to the place, or the increased value of the property that comes from emphasising its heritage qualities. Equally, there are benefits from heritage places which accrue more broadly, including the contribution to cultural identity, the benefit from the place for a region, and the benefits to consumers of knowing heritage places are being preserved. In cases where these externalities are not captured, private owners of heritage places will only invest in conservation of the place to the point where they can realise benefits from this investment.

In theory, externalities could be resolved privately between stakeholders. For such private resolution of externalities to work, three conditions must exist:

- property rights must be well-defined;
- the number stakeholders must be small; and
- transaction (negotiation) costs must be small⁸.

Unfortunately, the second and third conditions rarely hold for heritage goods (even the first condition sometimes fails if 'rights' to heritage may not be clear). Externalities are diffuse, so the number of stakeholders is large and the transaction costs very high, in comparison to the efficiency loss due to externalities. Also, because of the public good nature of heritage, some of the stakeholders can free ride on the actions of others. As a result, situations in which private parties spontaneously resolve heritage externality issues are rare.

Matching the market failure with the appropriate policy instrument

When intervention is justified — ie. there is a substantive⁹ market failure — there are a range of possible policy instruments,¹⁰ but these generally

⁸ This insight is known as 'Coase Theorem': R. Coase 1960, 'The problem of social cost', *Journal of Law and Economics*, no. 3, pp. 1–44.

⁹ Simply because a market failure exists does not necessarily mean that it is so substantial so as to warrant intervention. In assessing the significance of the harm (i.e. whether significant harm to a few people or moderate harm to a large number of people), there must be consideration not only of the potential consequences, but also: whether or not the impacts are

relate to a government's ability to do at least one of the following four things: inform; spend; provide services; and regulate.

The form of intervention will generally depend on the type of market failure present:

- The public good aspects of heritage (due to difficulties in excluding use and benefits derived from heritage buildings or places), are most commonly addressed through:
 - spending instruments, which induce further private investment, or private ownership in a heritage building that would not have otherwise been a viable investment for the private sector; and
 - services instruments, such as ownership of buildings and places, which move the ownership, and therefore the responsibility for investment in preservation, to government.
- Information asymmetry market failures in heritage are most clearly addressed through information instruments that provide signals in the market for heritage to assist actual and potential property owners.
- Externalities in heritage are primarily addressed through:
 - regulation instruments that ensure that the positive externalities of heritage buildings are taken into account by private owners. Regulation also addresses the risks of negative externalities in regions with particular heritage characteristics through zoning and other planning requirements;
 - spending instruments, which address the presence of externalities by providing targeted incentives for private owners to increase their investment in heritage conservation to a level which takes into account the positive externalities of heritage which accrue to society.

In a sense, a first step of the analysis of policy instruments is to determine whether the types of instruments being considered are broadly

reversible; whether the risk is involuntary or voluntary; and the likelihood of that harmful outcome occurring. In the case of heritage, the key issue is that loss of built heritage is irreversible. In this regard it is important to distinguish the built heritage from natural heritage; the problems are more challenging with built heritage. There may be some possibility of regrowth of native vegetation, whereas historic heritage places, once gone (i.e. demolished), cannot be replaced.

¹⁰ See National Incentives Taskforce 2004, *Making Heritage Happen: Incentives and Policy Tools for Conserving Our Historic Heritage*, Environment Heritage and Protection Council, Adelaide.

appropriate to the market failure at hand.¹¹ Figure 1 provides a simple screening tool to aid in this step, at which time a more granular assessment can be made of specific alternative instruments/policies (see next chapter).¹²

	Public Goods	Information Asymmetries	Externalities
Information	Low	High	Low
Spending	Medium	Low	Medium
Services	Medium	Medium	Low
Regulation	Low	Medium	High

Figure 1 Matching possible types of policy instruments with forms of market failure

¹¹ This demonstrates that a range of instruments are necessary to ensure that the full range of market failures is addressed.

¹² This approach of problem identification, and then matching instruments to address the specific problem is broadly consistent with the approach endorsed in: Australian Government 2007, *Best Practice Regulation Handbook*, Canberra.

3 Approaches to the assessment of specific policy instruments

Given the identification of preferred types of policy instruments (see previous section), it is normally necessary to choose a preferred approach from a more comprehensively specified set of instrument types.

The default approach of most economists is to undertake a benefit-cost analysis (BCA).

Benefit-cost analysis seeks to value the expected impacts of an option in monetary terms. These valuations are based on a well-tested economic theory of valuation based on willingness-to-pay or willingness-to-accept. This theory acts as a guide to how valuation should be achieved, and as a referee in disputes about valuation.

The valuations are based on the willingness to pay of the potential gainers for the benefits they will receive as a result of the option, and the willingness of potential losers to accept compensation for the losses they will incur. In principle, a policy response is desirable if the benefits exceed the losses, suitably discounted over time.¹³

BCA is attractive as a tool for guiding public policy because:

- it enables consideration of the gains and losses to all members of the society on whose behalf the BCA is being undertaken;
- it enables valuation of impacts in terms of a single, familiar measurement scale (i.e. money) and can therefore (in principle) assist in showing that implementing a specific option is worthwhile relative to the *status quo*; and
- the money values used to weight the relative importance of the different impacts are based on people's preferences.

While BCA provides a conceptual framework, many different valuation techniques arise in BCAs,¹⁴ although they tend to fall into two broad camps:

- revealed preference methodologies — revealed preference methodologies (e.g. choice modelling, conjoint analysis, contingent

¹³ This is referred to as the potential compensation principle, since compensation will not normally actually be paid, and so there will be both winners and losers.

¹⁴ See 'Cost Benefit Analysis and the Value of Heritage', a paper presented to the October 2007 Heritage Division Economics Workshop by Professor Jeff Bennett.

valuation, etc) rely on data that arises when individuals/entities act on real (as opposed to hypothetical) options;¹⁵ and

- stated preference methodologies — stated preference methodologies (e.g. hedonic pricing, etc) rely on data that is derived from individuals/entities describing how they would act in given circumstances.

Fundamentally, the difference between revealed preference and stated preference methodologies is that in the latter consumers are asked how they would respond in a hypothetical circumstance and in the former it is observed how they actually do respond in a real market circumstance.

Given the complexity of the approaches required to identify the benefits and costs for a range of use and non-use impacts it is rarely feasible to value all the benefits and costs of specific options in monetary terms (due to a combination of time and cost constraints). As a result, most BCAs incorporate some additional non-quantified impacts (where it is either not possible to value, or not economic to do so), reasoning away the inconsistency on the basis that as long as the (perceived) most important costs and benefits have been valued, others will be unlikely to change the overall result.

In addition to this criticism that relevant data may not be available or may be too expensive to collect:

- it may not be possible to present some impacts in terms where people are able to make reliable trade-offs against money;
- there may be impacts which cannot readily be quantified in a way which could be set against a scale of monetary values. While it is possible to value intangibles (e.g. the loss of life, injuries, etc), a BCA is ill-equipped to provide comparisons where the policy instrument generates outputs with diffuse social consequences (e.g. social cohesion, a sense of national identity, etc); and
- there may be impacts for which satisfactory values have not been derived, but which are nevertheless regarded as being of major importance.

In these circumstances — which are not uncommon in a heritage context — a Multi-Criteria Analysis (MCA) may be an appropriate alternative to a traditional BCA.¹⁶

¹⁵ For a useful typology of stated preference techniques see A. Merino-Castello 2003, *Eliciting Consumers Preferences Using Stated Preference Discrete Choice Models: Contingent Ranking Versus Choice Experiment*, Universitat Pompeu Fabra Economics and Business Working Paper No. 705, June.

¹⁶ There are useful methodological discussions — highlighting both strengths and weaknesses — in: Bureau of Transport Economics 1999, *Facts and Furfphies in Benefit-Cost Analysis: Transport*, Report 100, Canberra; Australian Government 2007, *Best Practice Regulation Handbook*, Canberra; and Government of Victoria 2007, *Victorian Guide to Regulation*,

MCA is a specific form of cost-benefit analysis that brings a degree of structure, analysis and openness to decision-making. It is particularly useful in circumstances where the elements of options that cannot be satisfactorily quantified and/or valued are very important to the assessment. MCA allows, however, the inclusion of monetary valuations where available alongside other quantitative and qualitative valuations.

MCA establishes preferences between options by reference to an explicit set of objectives and measurable criteria to assess the extent to which the objectives have been achieved. In simple circumstances, the process of identifying objectives and criteria may alone provide enough information for decision-makers. However, where a level of detail is required MCA offers a number of ways of aggregating the data on individual criteria to provide indicators of the overall performance of options.

MCA is both an approach and a set of techniques, with the goal of providing an overall ordering of options, from the most preferred to the least preferred option. As a set of techniques, MCA provides different ways of:

- disaggregating a complex problem into more manageable pieces to allow data and judgements to be brought to bear on the pieces;
- measuring the extent to which options achieve objectives against selected criteria;
- weighting the criteria (if desired); and
- reassembling the pieces to present a coherent overall picture to decision-makers.

A relatively standard formulation of MCA has eight stages, as set out in Figure 2.

Department of Treasury and Finance, Melbourne. For a detailed methodological overview see Department of Transport, Local Government and the Regions 2001, *Multi-Criteria Analysis Manual*, available at <http://www.communities.gov.uk/documents/corporate/pdf/146868>.

1. Define the objectives for the options and establish the aims and context for the MCA.
2. Identify the options.
3. Identify the criteria for assessing the consequences (costs and benefits) of each option.
4. Scoring: assess the expected performance of each option against the criteria.
5. Weighting: assign weights (if desired) for each of the criterion to reflect their relative importance to the decision.
6. Combine the scores for each option to derive an overall value.
7. Examine the results.
8. Conduct sensitivity analysis.

Figure 2 Steps in a Multi-Criteria Analysis

Where MCA is useful is that it requires a clear enunciation of the criteria by which the proposals are being judged.

Step 3 in the MCA framework — ‘Identify the criteria for assessing the consequences (costs and benefits) of each option’ — sets the criteria under which the various identified options will be judged, both on a standalone basis and in comparison to other options.

The criteria must reflect the absolute and/or relative performance of the options, and must be measurable, in the sense that it must be possible to assess, at least in a qualitative sense, how well a particular option is expected to perform in relation to the criteria.

A ‘top-down’ approach asks about the overall objectives that are to be achieved; a ‘bottom-up’ approach asks how the options differ from one another in ways that matter (both benefits and costs).

To some degree the MCA approach normally reflects a merging of the top-down and bottom-up approaches.

An explicit advantage of this approach is that any complementary consultation process can be used to engage stakeholders and seek their views as to what criteria should guide the ultimate assessment process, the scores against the criteria, and any weightings that should be applied to the various criteria.

The scores (weighted or unweighted) for each option can then be combined to derive an overall value. The results are presented in a performance matrix, in which each row describes a criteria and each column describes the performance of the options against each criterion.

The final step in the MCA process takes the examination of results further and includes sensitivity analysis. Sensitivity analysis provides a means for examining the extent to which vagueness about the inputs or disagreements between people makes any difference to the final overall results. The ranking of options may well be sensitive to choice of criteria or some relatively small variations in data, scoring or weighting. The presence of uncertainty makes it almost inevitable that the assumptions and judgements employed in the analysis are less than firm. Hence,

sensitivity analysis is often carried out on each of these aspects of the analysis to address the question: do the rankings stay the same when criteria, data, scoring and weighting are adjusted within reasonable bounds?

While, at least in comparison to BCA, MCA is seen as potentially compromised because there is no common unit of comparison between options,¹⁷ MCA has many advantages over informal judgment unsupported by analysis:

- it is open and explicit;
- the choice of objectives and criteria that any decision making group may make are open to analysis and to change if they are felt to be inappropriate;
- scores and weights, when used, are also explicit and are developed according to established techniques. They can also be cross-referenced to other sources of information on relative values, and amended if necessary;
- performance measurement can be sub-contracted to experts, so need not necessarily be left in the hands of the decision making body itself;
- it can provide an important means of communication, within the decision-making body and sometimes, later, between that body and the wider community; and
- when scores and weights are used, it provides an audit trail.

While it is somewhat easy to be dogmatic about the methodological advantages and disadvantages of BCA relative to MCA, both have their place in the toolkit for evaluators of policy instruments and options in heritage policy.

Indeed, it is possible to conceptualise a standardised approach to heritage policy evaluation that has been designed with sufficient flexibility to be considered as both a BCA and a MCA in that it allows comparison of policy instruments in a purely financial manner (where quantified inputs are available), but is also represented and developed in a more holistic manner that compares options in a more qualitative manner as allowed for in MCA.¹⁸ In comparison to existing approaches, this dual track model would increase analytical rigour, while providing a framework for more qualitative assessments.

¹⁷ See discussion in Robert Sugden 2007, *Integrating Cost-Benefit Analysis and Multi-Criteria Analysis of Flood and Coastal Erosion Risk Management Projects*, Joint Defra/EA Flood and Coastal Erosion Risk Management R&D Programme (R&D Project Record FD2018/PR2), Department for Environment, Food and Rural Affairs, London.

¹⁸ Robert Sugden 2007, *Ibid.*