

## 4.0 COST BENEFIT ANALYSIS AS A FAMILY OF METHODS

### 4.1 Incidence of Costs and Benefits of Conservation

From the discussion above (3.2) it is seen that the cultural built heritage is a singular resource and commodity. It is owned and occupied as other real property but its management is influenced by government with an eye to conservation; the control is on behalf of the community, current and future but the owner/occupier must bear the cost of the conservation, except insofar as he receives compensation or subsidy from the government, that is the remainder of the population.

This leads to a complex situation in the incidence of economic costs and benefits of conservation described above (3.4). They are not symmetrical, neither on contemporary people nor between generations. This is now examined more closely by reference to Table 4.1 which shows a means of tracing the incidence of conservation, where rehabilitation of a building, group or area (conservation (C) in columns 6 and 12) is compared with the alternative of clearance and redevelopment (R in columns 5 and 11).

In order to bring out the incidence on different community sectors it is convenient to divide those involved into the producers and operators of relevant buildings in the urban system (columns 1, 2) and those who consume the services generated (columns 7, 8). For each of the sectors is briefly described the nature of the impact of the conservation proposal (3 and 9) and space is provided for the judgement as to whether these sectors would be better off or worse off (plus or minus) with redevelopment.

The Table also brings out (columns 5 and 11) that the costs and benefits are not of a uniform kind and significance, so affecting incidence. This is achieved by distinguishing between the four types (columns 3 and 10) namely:

Direct (D)	experienced directly by the sectors involved in the economic process
Indirect (I)	experienced indirectly by other sectors, which are divided into:
Associated real AR	technocological (real) costs and benefits falling on the remainder of the community; and
Associated financial AF	pecuniary (transfer) costs and benefits falling on the remainder of the community.

**TABLE 4.1**  
**DISTRIBUTION OF BENEFITS AND COSTS OF CONSERVATION**

Sector	Producers and operators						Consumers		
	Impact of conservation Description	Type	R		Sector	Impact of conservation Description	Type	R C	
			4	5 6				7 8	10
2	3	4	5 6	7 8	9	10	11 12		
	Owners of CBH property	Property values	D		2 Occupiers of property	Occupation values	D		
	Owners of property - nearby - general	Property values	AF		4 Occupiers of property - nearby - general	Occupation values	AR		
5	Local government - on site - off site	Costs	D		6 Local services	Occupier	AR		
	Local planning authority	Operating costs	D		8 Local ratepayers	Rate assessments	AF		
	Local conservation agencies	Capital and operating costs	D						
	Central conservation authority - loans - grants	Capital and operating costs	D						
13	Central government conservation authority	Operating costs	D		14 Visitors and tourists	Experience of heritage	AR		
15	Local economy - goods - services	Employment	AR		16 Local community - residents - workforce	Environment Culture Employment	AR		
17	National economy - taxation revenue - taxation costs - imports - prices - maintenance	Economic flows	AR		18 National - citizens - taxpayers	Heritage prestige Tax assessment	I AF		
					20 Posterity	Opportunities for heritage			

Notes: 1, 3 : 'Owners' include developers, financiers, etc.

6 : Local services include shops, hotels, restaurants, etc.

9 : Local conservation agencies include the local authority, voluntary bodies, etc.

R : Redevelopment

C : Conservation

Source: Lichfield, Economics in Urban Conservation, Table 12.1.

We thus have here an indication of the variety of sectors who may be involved in decisions whether or not to conserve, be they directly or indirectly concerned with the process. For example, the owners and occupiers of property outside that conserved (3, 4) could get benefits from the conservation which are transfer costs (in fact other property owners would lose) but would not pay for the rise in value except perhaps through increased taxation assessment. The authorities concerned with conservation (7-13) will pay for it financially in the administrative machinery which is set up and perhaps through subsidies, to the real benefit of the local and wider community (14-20). The visitors and tourists to the locality (14) will receive the benefits from experiencing the heritage but will not be paying directly for it (e.g. entrance charges) although they will have increased indirect costs (travel, hotels, etc).

#### 4.2 Role of Impact Assessment in Cost Benefit Analysis

In any cost-benefit evaluation it is the impacts from the project, plan, etc. which are evaluated in terms of the costs and benefits to which they give rise. Impact assessment is thus a necessary component. In general, it aims at predicting all relevant and foreseeable (or expected) consequences of a plan.<sup>{1}</sup> This requires a systematic methodology (and preferably a modelling approach) in order to avoid a neglect of relevant information, of second-order (derived) effects or of subjective measurements. Here, in general, a system's analytic view - in which the mechanisms and the border lines of a relevant spatial or socio-economic system associated with the plan evaluation at hand are clearly described - is to be preferred. This leads usually to a broad set of indicators to be taken into consideration.

Secondly, it is of utmost importance to specify as precisely as possible the objectives (aims, targets, etc) of a plan evaluation problem. This is necessary to define operational judgement criteria. For example, it makes a big difference whether a tourist development plan is designed for the island of Sardinia with the aim to maximise tourist revenues vis-a-vis the aim to ensure an ecologically sustainable economic development. In practice, it turns out that there are often multiple (usually conflicting) plan objectives.

Next, it is also critical to pay attention to the policy measures to be used in order to achieve the above mentioned objectives. In various cases, benefits emerging from objectives tend to be over-emphasised by decision-makers, whilst sacrifices (e.g. costs in the form of policy controls and expenditures) are underestimated.

Finally, it has to be recognised that plans are no isolated islands in open sea; they are anchored in all respects in other systems of our society and have an impact beyond their (artificial) system's boundaries, and are also influenced by external forces. For example, it may be important to

undertake an economic appraisal of an urban cultural movement, but it has to be recognised at the same time that such an appraisal cannot be isolated from the whole stock of historico-cultural monuments in the area concerned.{2}

The conclusion from the above exposition is that impact analysis is by definition *multidimensional* in nature; it deals with socio economic, cultural, environmental and distributional impacts of a plan. These must be predicted as a basis for assessing the costs and benefits, e.g. in the area of technology assessment, environmental impact analysis, spatial impact analysis, etc. {3}

A good example of impact analysis in the cultural sector can be found in Heitbrink et al.{4} These authors have studied the economic significance of cultural amenities by investigating the impacts of investments in urban culture as part of the economic infrastructure of the city concerned. Their study concerned the city of Zwolle, the capital of the province of Overijssel in the Netherlands. Cultural amenities referred here to all buildings with either a cultural function (e.g. theatres, concert halls, cinemas) or a function as a monument (including old dwellings, historical shops, or old churches).

The economic impacts of investments in the cultural sector were subdivided into effects: (1) on the production of art; (2) on all urban economic sectors; (3) on the built environment; (4) on the residential and locational climate. It is clear that some of these effects can be expressed in monetary units (e.g. value added), others can be quantified but not in monetary terms (e.g. new jobs), whilst also qualitative effects can be distinguished that cannot be measured with a reasonable precision.

It turned out that investments in the cultural sector provided a synergetic benefit to the general economic functioning of the city by increasing its attractiveness as a shopping, recreational and residential centre.

It is also noteworthy that the time dimension in impact assessment has to be considered. Usually, an impact study is only based on a comparative static framework, so that a (dynamic) transition path is left out of consideration. The lack of reliability and validity of dynamic (spatial and urban) models hampers an application of these models in the field of impact studies. In this respect, many research efforts will have to be undertaken so as to reach a meaningful use of dynamic spatial models. In any case, it is necessary to make a distinction between impacts from the construction and the operating stage of a project, respectively. Input-output analysis can provide a useful tool in this respect. It should also be noted that - despite the absence of operational dynamic models - it may be meaningful to employ a step-by-step impact analysis, so that the direct and indirect benefits of policy measures can be analysed in a series of sequential stages.{5}

## 4.3 The Family of CBA Methods

From the preceding it is apparent that traditionally cost benefit analysis primarily addressed efficiency questions, from the viewpoint of the public decision taker, who is concerned with his own direct costs and benefits. But government has been led to take a broader view having regard to more than one sector and also more externalities (e.g. road and rail transport when evaluating an airport investment). This extension earned the title of social cost benefit analysis (SCBA).

From the preceding section it is also apparent that even SCBA might not cater for all the sectors which might be involved. Thus conservation projects necessitate a further widening out of the scope of the SCBA.

Accordingly within conservation there can be seen the need for introducing variants from traditional financial and cost benefit analysis, which distinctively apply the method according to the circumstances.{6} These vary with the criteria for choice which are set, implicitly or explicitly, by the decision maker or analyst in question, in relation to, for example:

- (a) **Whose costs and benefits are to be taken into account?** The individual purchaser would think of his financial costs and benefits, or those of his family, and not others, unless he were altruistic. A private company would also think of financial costs which the company had to meet and benefits for which they could charge, so excluding "externalities", unless it was into "ethical investment", which included non-financial considerations. A local authority might be concerned with the cost of all its corporate services and all the benefits to those they serve, which would tend to be non-financial. In a contemporary study of the regeneration of the historic centre of Naples, those commissioning the study were interested in the financial, economic, fiscal, conservation, public health, sociological and transportation benefits.{7}
- (b) **Which costs and benefits in geographical terms?** The private individual or company would tend to think of the costs and benefits accruing to the household or project with which they are immediately concerned, and not those falling elsewhere. But a local authority, faced with the need to provide for the off site impacts of a development project (traffic, water, sewerage, etc) would consider also these cost implications. And while the Naples study just mentioned concentrated on investment in the historic centre, the economic benefits thereby generated in the metropolitan area, province and Italy as a whole, were also taken into account.{8}
- (c) **Should the decision relate simply to efficiency or also equity/social justice?** The direct comparison of the pertinent benefits or costs is a measure of efficiency in terms of value for money, whether the

costs and benefits be those to be experienced by the decision maker (the individual or family) or the wider community (municipal services). But whereas the individual or company might not be concerned with the distributive consequences of the purchase or investment (unless they take an ethical stand, such as constraining out possible investments in industries related to drugs, armaments, or low standard of conditions for labour) they would not concurrently take into account the criterion of equity and social justice, as between those to whom the product of the purchase or investment is distributed.

But a municipality which represents its electorate, and is also concerned with prospects for return at the next election, would take account of distribution, and so be influenced by social justice and equity as well as efficiency. This would certainly apply to a planning authority choosing between optional plans for a community, if only because of the pressures by the public which forces them to do so. Even if they do not wish to weigh social justice/equity more than efficiency (on the proposition that only the creation of wealth makes possible its distribution) they would certainly be sensitive to the distributive aspects if only to be warned of the opposition they are likely to encounter, at the ballot box and before, if equity and social justice are ignored.

From these examples it can be seen that there is potential for considerable diversity in the criteria for adopted choice by decision makers. For this reason, the members of the cost benefit family have specialised, either expressly or implicitly, as follows: {9}

**1. Financial and Social Financial Analysis:**

The financial implications for only the promoter of the project (FA) or also for other parties directly involved, e.g. the consumer (SFA).

**2. Cost Revenue Analysis:**

The financial implications for government (central, local, governmental organisations) in terms of taxes which need to be raised to finance conservation and the fiscal revenues which would result from that expenditure. This could relate to a single government body (e.g. local authority) or to all such bodies together (Social CRA).

**3. Cost Benefit and Social Cost Benefit Analysis:**

The implications for the use of resources in the economy only by the promoter of the project (CBA) or also by other promoters who are affected (SCBA).

#### 4. Community Impact Analysis:

The implications for all sectors of the community who are impacted by the project, even indirectly (CIA).

The application of the methods in practice brings out the typical differences shown in Diagram 4.3A, typical because the precise methods are not standardised, and particular studies call for a combination of different aspects, without necessarily a change in nomenclature.

**DIAGRAM 4.3A  
DIFFERENCE BETWEEN THE TOOLS FOR ANALYSIS OF  
COSTS AND BENEFITS**

	Financial			Economic		Socio-economic
	FA	SFA	CRA	CBA	SCBA	CIA
<b>SITE</b> • on • off	✓	✓	✓ ✓	✓ ✓	✓ ✓	✓ ✓
<b>SECTOR</b> • promoter • on site • off site • all relevant	✓	✓ ✓	✓ ✓ ✓	✓	✓ ✓ ✓	✓ ✓ ✓ ✓
<b>COSTS AND BENEFITS</b> • direct • some indirect • community	✓	✓	✓ ✓	✓	✓ ✓	✓ ✓ ✓

Source: Adapted from Lichfield, Nathaniel (1988)

#### On site/off site

- ◀ FA, SFA relate only to direct impacts on the project site, whereas CRA, CBA, SCBA and CIA also look outside.

#### Sector

FA and CBA relate only to one particular sector which is directly involved in the project, the promoter and related consumers, whereas SFA, SCBA and CIA go beyond.

SFA/SCRA relates to all parties directly involved in a project and not only the promoter.

- ◀ SCBA takes into account, in addition to the promoter, selected sectors who are also impacted.
- ◀ CIA relates to all relevant sectors.

### **Costs and Benefits**

FA, SFA take into account only direct costs and benefits.

- ◀ CRA, CBA and SCBA take into account selected indirect costs and benefits whereas CIA attempts also to cover all those on the relevant community (even if costs or benefits cannot be measured in monetary units).

Any decision taker would therefore need to ensure that the analyst used for his study the method which was appropriate for his criteria of choice. This is brought out in Table 4.3B, which presents the information in 4.3A in a different form, and specifically in relation to conservation. In the rows are four different possible decision takers on any particular project, and in the columns the direct financial costs and benefits and also the indirect. At the bottom is the appropriate evaluation method, against which in the columns are shown the costs and benefits which would be included in the analysis.

From the preceding it follows that in choosing the appropriate technique for the project which is being evaluated it is important not to run fast to catch the wrong train: since the train may not take the analysis itself to the destination which would give the decision-taker the answers to his questions. But equally important, since each of the techniques also depends on its cost effectiveness as well as its logic in application, the analyst should not pay too much to catch the right train. What is selected to test particular conservation projects can be as simple as deciding to restore a piece of art by comparing the market value of the object d'art before it is restored and after, or it can be as complicated as a massive research design necessary to efficiently rejuvenate entire ancient cities.

#### **4.4 Value Content of Method**

From the above (4.3) it is apparent that there are many members of the cost benefit family who are available for use by the analyst. But the choice of method is not one for the analyst to make alone. He needs to reflect in his choice the criteria which are set by the decision maker, or assumed on his behalf by the analyst; and he needs to address himself to the particular questions to which the decision maker is addressing himself. These considerations give rise to what has been termed the "value content" of cost benefit analysis, namely the underlying values which are informing the analysis itself. {10}



Having identified the range of methods most pertinent to cost benefit analysis of the cultural built heritage, we now proceed to consider each in turn (5.0-8.0) before concluding with the measurement of cost and benefits which relates to the whole family of methods (9.0).

**TABLE 4.3B**  
**CONSERVATION OF THE ARCHITECTURAL HERITAGE:**  
**COSTS/RETURNS TO DIFFERENT ACTORS**

Costs and Benefits	Actors directly in conservation	Government making subsidies	Sponsors	Local Planning Authority
1	2	3	4	5
<b>Direct Financial Costs</b>				
• Capital	✓		✓	
• Operating	✓	✓		✓
<b>Direct Financial Benefits</b>				
• Sale	✓			
• Rent	✓			
<b>Indirect costs/benefits</b>				
• Heritage/cultural		✓	✓	✓
• Social				✓
• Economic		✓		✓
• Environmental				✓
• Prestige			✓	
<b>Evaluation Method Used</b>	FA SFA	CRA CBA	CE	CIA

- FA = Financial Appraisal  
SFA = Social Financial Appraisal  
CRA = Cost Revenue Analysis  
CBA = Cost Benefit Analysis  
CE = Cost Effectiveness  
CIA = Community Impact Analysis

Source: Adapted from Council of Europe (1990) Table III