

CAPTURING THE FULL VALUE OF LANDSCAPE
Council for National Parks

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A reminder of what landscape is

Landscape is hugely complex, dynamic and ever changing. It depends on the geology and land form, the vegetation, the water, the man-made features. It has seasonality and ephemera, it has weather, rhythms, different patterns of use, the tides, sunlight and moonlight; its colours change; traffic, people, animals, birds, come and go. As landscape changes so it changes our perception of the things that happen within it.

Landscape is experienced. We don't just see it, we sense it with all of our senses, hearing the birds and the waterfalls, smelling the wild garlic and the silage, tasting the wild fruit and the fungi, tripping over roots and climbing slopes, feeling the soft cotton grass and the rough bark of trees.

Landscape is an heirloom – nature and man have worked on it over many thousands of years. The history of our race is written upon it from the rings of standing stone and the ridge and furrow, to the medieval crosses and disused quarries, the field barns and the old mines. We look after it all to pass on to future generations.

Landscape is intimately and essentially related to our survival, to the production of food, wood and timber, clean water and air; to our health – it provides the space to take exercise walk, cycle, horse ride, hang-glide; to our well-being - it gives us a sense of challenge, freedom, inspiration.

To some it is their home, to others a place to visit or to dream about. People are employed to look after landscapes and people of all ages and cultural backgrounds come together to learn about, enjoy and improve them. Landscape belongs to everyone. It is common to all people, the medium through which people unite – it is an expression of democracy.

To deal with such a complex concept we need to agree a definition.

Definition of landscape

From the European Landscape Convention¹:

- an area, as perceived by people, whose character is a result of the interaction of natural and/or human factors

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- an essential component of people’s surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity.

Landscape is about the relationship of people and place – it is the setting for our lives. It is constituted of so many things which give it a multitude of values - economic, ecological, social, aesthetic, historical, cultural, mental health, security and stability, spiritual and religious. It is so much more than a view.

How do you properly evaluate all that, never mind cost it?

We have heard that the DfT is proposing to make an economic valuation of landscape using a willingness to pay (WTP) method. From this a cost/ha of the impact of the transport scheme on different landscape types would be developed and used in the NATA (New Approach to Appraisal) alongside a qualitative assessment. The costings would provide an off the shelf price that could be applied to schemes in different parts of the country. Fundamentally NATA would be trading the value of landscape (and other environmental goods) against the value of benefits from the transport scheme. This raises some serious and controversial issues.

Issues raised by economic valuation of impacts on landscape

- *We shouldn’t do it!*

It is ethically and morally wrong to put a price on landscape. It reduces landscape to a commodity, a functional utility that ignores its intrinsic non human value. It is also wrong to reduce complex decisions to financial figures. Quantitative analysis cannot capture the inherently qualitative and context specific nature of any participation process. We don’t know how many people feel this way and may be excluded from any economic valuation, but the key issue for society is that we have never had the public debate – should we cost unique things like landscape and natural beauty and then trade them against ubiquitous things like time savings?

- *We can’t do it!*

We can’t value everything and in an economic valuation absolutely everything must be valued. The table below indicates what constitutes total economic value for an environmental resource.

Total Economic Value					
Use Value			Non-use Value		
Direct Use Value (outputs directly consumable)	Indirect Use Value (relates to functional benefits)	Option value (future direct and indirect values)	Existence value (value derived from knowledge of continued existence)	Altruistic value (value from benefits accruing to others)	Bequest value (both use and non-use from environmental legacy)
Includes: • Recreation • Landscape	Includes: • Carbon sequestration	Includes same list as for direct and			

<ul style="list-style-type: none"> • Cultural Heritage • Tranquillity 	<ul style="list-style-type: none"> • Habitats • Biodiversity 	indirect uses	
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The key thing missing is the intangible benefits. Nowhere does it capture the aesthetic or the spiritual, our wellbeing or our happiness. It ignores recent thinking in the economics of social welfare which is changing from ‘the consumption of commodities’ approach to asking what makes people happy? What influences well being? A complex web of benefits results from a visit to a landscape that stretches on into memories evoked years later. The effect that radical or even slow relentless change to landscape might have on people could range from the minimal - a sense of disappointment on each visit - to the profound if one lost one’s home through either compulsory purchase or left the area because of grief at the damage. It would be very complex, time consuming and expensive to unravel where the intangible benefits from landscape stopped but it would have to be done.

- *Valuing change in landscape*

The economic valuation would be valuing change in the landscape not its absolute value, which would be impossible.

But the change measured would be merely scratching the surface of an immensely complex concept. As one writer put it ‘corncrakes are not provided in the same way as cornflakes’. Neither are landscapes. We cannot predict what the diverse interlinked impacts of environmental changes will be.

Following measured preferences may not give the best result for the planet or humans; it may not ensure we get the essential landscapes and life support systems that we need to survive. Societies that have satisfied the narrow preferences of their citizens have ended in ecological collapse (Easter Island).

How people value change is complicated. It depends on both the landscape in which change would occur and the proposed change to it e.g. habitat change versus wind energy development. It depends on whether change is valued over a whole landscape or to components of it. WTP may be lower for whole landscapes than for the sum of their components, which must depend on how many components are valued. Landscapes that can substitute for each other may not have the same value. One piece of estuary may not have the same value as another piece because it cannot be reached by car. If two components of a landscape complement and rely on each other for their appreciation, e.g. access to the landscape being valued, then change in one component will alter the value of the other. People may be only willing to pay the same amount for 5ha of landscape as for 10ha. Their perception of the value of a landscape may change. The suggestion of building a new railway across beautiful countryside could cause the value of the neighbouring landscape to go down because it has lost its integrity or up if it is scarce.

How long does payment to avoid the change go on? What determines when we stop being compensated for the damage? When everyone who knew the landscape before it was damaged is dead?

- *Valuing loss of a landscape*

WTP studies in this country have looked at improvements to landscape or prevention of deterioration to maintain the status quo. They used soft changes to the natural world, such as clear felling versus continuous cover for woodland, but not the disruption and violation due to built development such as a new airport. WTP for an environmental change is not the same as willingness to accept (WTA) compensation for loss where a good already exists. WTA is typically 5-14 times higher than WTP² and is very likely to be the case with major transport schemes where landscapes are lost. The amount people would be willing to pay to prevent loss of tranquillity in a valley due to a new bypass could give an economic value that justified tunnelling the whole of the route.

- *Identifying and sampling the population*

In order to value landscapes all relevant users groups need to be considered. Local residents may be easy to identify but commuters who drive or sit on a train through the landscape and visitors to it, people who look at attractive images in books and on TV or who just value knowing that those landscapes are there are not so easy to identify. There are very real differences between populations' preferences and valuations – participants in specialist outdoor pursuits appear more sensitive to landscape. Visitors are willing to pay nearly four times the amount that locals would to preserve the Norfolk Broads from flooding.

How sampling is done is crucial. Residents can be pinned down at home but visitors may be missed. The wealthy are more willing to pay than the less well off. Should sampling be done randomly in the area of the landscape or based on centres of population within the broader area?

- *Depicting the change*

Depicting landscape change is difficult and expensive. Photographs and computer images may be quite real but they depend on what is chosen by experts for lay people; they may only show one locational perspective; they rarely capture landscapes evolving dynamically through and after change or the cumulative impacts of change; they do not offer the landscape 'on the move view' which is how walkers and cyclists appreciate it; they fail to communicate the richness of landscape experience (sight, sounds, smells). Nor do they portray drivers' interactions with a close and rapidly changing landscape against a more distant, slower changing backdrop.

- *High cognitive burden*

There is a high cognitive burden on respondents. The large number of attributes and the need for simple mental calculations requires mental agility and education. People struggle

² loss aversion; loss is more important than gain; also WTA higher if fewer available substitutes for the commodity

with the unfamiliar and the complex. Face-to-face interviews and postal questionnaires, with explanations about the change and the budgetary constraints on it, and using photos or computer images, are a new experience for many people. They may be familiar with, for example meadows and coast, but not with being asked for their preferences about them.

- *Under counting*

This has two aspects with respect to landscape. First, if we recognise that landscape gives us direct benefits from our use of it as individuals and indirect benefits from the 'services' that it provides – clean water, good quality soil - we could ascribe separate values to each. But it is not easy. A flood plain may offer a charming scene and have a utility value but it may not be perceived as the latter except at special times. Where would it be counted?

Second, there are the benefits that people get directly from landscape, for example bird watching or visiting Stonehenge. Wildlife contributes to landscape as does cultural heritage so there are real dangers of overlap and under counting here.

- *Are the preferences real preferences?*

The result from WTP studies may not reflect the real preferences of individuals because of all kinds of biases. Hypothetically people might say they would pay £100 every year to preserve a medieval church from the route of a guided bus but would they actually do so if asked? People may respond to maximise their personal good – they are willing to pay for road safety but continue to drive dangerously (Hardin's classic 'tragedy of the commons'). What information is provided and the way it is presented can lead to bias. Respondents may be responding to the computer image not the real landscape. Preferences change over time due to experience and education.

- *Protest bidders*

Those who don't play the game get eliminated. Up to 38% of respondents in landscape valuation studies are 'protest bidders' who are excluded from the study. They protest about the payment methods (entry price, annual entry, local tax, income tax, daily charge, donation) or over their perceived property rights over landscapes (which they have through the planning system and grant aid). They may have strong preferences but they do not conform to an idealised rational agent model and are excluded for having the 'wrong motives'.

Putting money and transport together in WTP to prevent landscape damage could be controversial. Financial hackles may go up. Fuel duty increases got lorry drivers blockading the ports and more than a million people signed a petition to say no to road pricing. People feel transport in their pockets in a way that they don't feel moorland conservation – it is deeply personal and political. Asking people to pay extra tax in order to avoid motorway widening through ancient woodland might lead to a high number of protest bids.

- *'Benefits transfer'*

Once the DfT has identified economic values for impacts on landscape types it would then use the results to value impacts on individual landscapes. In this 'benefits transfer', values are simply transferred from one study to another with or without adjustment for local particulars. This creates serious problems when applied to landscape:

- There is an infinite array of landscape elements to be experienced. Each landscape is a spatially defined assemblage of elements that is to a greater or lesser degree unique. Consequently there are almost unlimited opportunities to influence the WTP.
- Landscape is a cultural construct, the perceived elements of which may not be transferable even between populations in the north and south of England.
- There are diverse and often conflicting preferences in the populations of interest which will be influenced by knowledge, experience and the socio-cultural perspective of the viewer for each landscape.
- There would be less scope for expert judgement in the selection of transfer values.
- There would be no scope for local and/or non-expert perspectives.
- In practice landscape assessment followed by landscape valuation over the whole of England would be needed. Transport schemes cannot be dealt with at the strategic level. They impact on unique local landscapes. Such assessments would be very expensive and time consuming. In the National Forest alone there are 34 unique character areas!

How would the DfT proposal work in practice?

To aid the debate I have attempted to apply what the DfT is proposing crudely to a hypothetical situation.

In one study respondents were asked how much they would be willing to pay to preserve and enhance the whole of Scotland's mountain environment. The study came up with a value for heather moorland of £32.81 per household per year.

Transferring this value to the Southern Pennines where the area of the Special Protection Area is 31,820 ha one would scale down the price for the smaller area compared to the Scottish mountains. Let us say by a tenth – this is a very crude estimation – which gives the value for the Southern Pennines of £3.281 per household per year.

As the land lies in a National Park we will assume all the households of England (22 million) might be interested in paying for its conservation which gives a total value to the Southern Pennines of £72.18 million per year. From that we can derive a value per ha for landscape of £2,268 per year.

If we take a hypothetical road scheme that would take as a footprint 56.6 ha of the moor and apply the value/per ha for landscape, we get a total value for the landscape destroyed of £128,368. However we also have to take into account the landscape impairment by the new road. Let us say the landscape is impaired over 300 ha. This adds a value of £680,400. In total then the economic valuation appears to be £803,768 for landscape lost.

If we adjust for the fact this is loss of landscape and invokes the WTA which can be between 5-14 times higher than willingness to pay we get a value of between £4 million and £11.3 million. In the NATA we would have at worst £803,400 or at the very best £11.3 million to trade against the value of benefits to travellers of more than £200 million...

Intuitively this value feels wrong in a National Park where a legal obligation by statute has been set for conservation and enhancement of natural beauty and where there should be 'no major development except in exceptional circumstances'. One could argue that no price is acceptable. The huge range of possible prices is alarming and raises the question of how will we know we have got the price right? We tend to choose the lowest values, for example carbon costs which some believe should be ten times higher than they are, and avoid costing the whole, for example noise which would only be costed for its impacts on households, not on people in the street. Under counting of landscape benefits from those things that contribute to it, such as biodiversity, water and cultural heritage, would lead to under valuation.

Putting a financial value on impacts on landscapes is clearly problematic. Even if it is acceptable to do it, to do it properly requires enormous resources of time and money which could more effectively be diverted to improving the implementation of the NATA.

What needs to be done then to ensure that the qualitative assessment of landscape is fully recognised when transport schemes are appraised?

- *The importance of all landscapes must be recognised*

Quality landscape is everyone's right and all landscapes are important (European Landscape Convention). The Government's planning guidance for sustainable development in rural areas, PPS7, protects and requires a test of major development in designated landscapes but it aims to protect the whole of the countryside for the sake of its intrinsic character and beauty, the diversity of its landscapes, heritage and wildlife and the wealth of its natural resources so that it may be enjoyed by all. PPS7 must be scrupulously applied on a case by case approach to each landscape.

- *There must be full participation by the public in landscape assessment*

Everyone has a right to be involved. The European Landscape Convention requires 'procedures must be established for the participation of the general public, local and regional authorities, and other parties'

'Identification and assessment of landscape it has to be with the active participation of the interested parties taking into account the particular values assigned to them by the interested parties and the population concerned.'

To date the local or community component has been missing despite its inclusion in various parts of the NATA and WebTAG. There is a top down approach at all levels of government from which local communities and individuals are either barred or feel

excluded, with nothing significant to add, disadvantaged by the planning process and intimidated by the language. We need experts in the process to facilitate and guide but their views must not dominate. Participants should include experts who can speak on the softer qualities of landscape – historians, artists, psychologists.

Together people should be allowed to explore public values for particular places – to describe and negotiate their values to allow for ethical and moral judgements to be incorporated. In the end there would be a collective expression of landscape that is recognised, extracted and acted upon. But participation is expensive and there are no short cuts.

- *Landscape assessment should be independent of those promoting the scheme*
The impact of a scheme on landscape (indeed all of the environment) has to be made by truly independent experts, not those intimately involved with design and build. Consultants employed to assess the impacts on landscape and suggest mitigation measures are unlikely to jeopardise their own contract and could regard measures they propose for mitigation as more effective than they are in reality.

- *Qualitative impacts should be properly recognised in the NATA*
The presentation of the results of assessment in the Appraisal Summary Table is crucial. As suggested by Green Alliance, there should be no trade off between very different costs and benefits to produce a single monetary value. There should be costs and benefits for each objective. However a financial value for landscape alongside the qualitative impacts would undermine the latter – the cost would be taken and landscape would be reduced to a bottom line that reflects only a part of its value. Instead the scheme impacts on landscape would be described more accurately without valuation. This requires training of professionals filling in the AST. Those making judgements using the AST also require greater understanding of how to use it. To give due weight to the environment, at the national level those judgements should be made jointly between the DfT and Defra.

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