

## **The Environment in NATA – Landscape and Environmental Capital**

### **A Seminar Hosted by The Council for National Parks, Department for Transport and Natural England on Friday 7 March 2008 at Great Minster House**

Delegates included HMG officials, statutory environmental agencies, government advisory bodies, local authority and national park transport planners, transport consultants, non-governmental organisations and interest groups.

#### **Introduction**

The seminar chair, Adrian Gault, Head of Transport Analysis and Review Division, DfT, welcomed delegates. Two key dates to note are.

- On 27 March, the DfT is sponsoring a conference on Transport Appraisals.
- NATA Refresh consultation on ends on 31 March.

#### **Purpose of seminar**

- Discuss DfT's current approach in accounting for transport's environmental impacts
- Consider the environmental assessment in NATA and the draft findings of TRL's research into the 'Environmental Capital' approach.
- Discuss DfT's current work on monetising the landscape impact of transport schemes
- Consider the merits of different approaches to presenting and using environmental information in appraisal

#### **Structure of seminar**

The event involved four presentations:

##### **1. The NATA Refresh Context**

David Thompson, Chief Economist, Department for Transport

##### **2. Effectiveness of the Environmental Capital Approach**

Paul Tomlinson, Head of Environmental Assessment and Policy, TRL

### **3. NATA Refresh: Next Steps in Valuing Landscape**

Peter Sellen, Assistant Economist, Department for Transport

### **4. Capturing the Full Value of Landscape**

Anne Robinson, Trustee, Council for National Parks

and two workshops:

Group One chaired by Kathleen Covill, Natural England/Paul Tomlinson  
**Environmental Capital, Key Benefits and Challenges.** Practitioners to

Group Two chaired by Ruth Chambers, Council for National Parks  
**Monetary and Non-Monetary Approaches: Strengths and Weaknesses**

The meeting also discussed an additional topic:

Towards a Sustainable Transport System and Environmental Challenges, led by  
Graham Pendlebury, Director Environment & International, Department for Transport.

## **Presentations**

### **1. NATA Refresh Context**

**David Thompson, Chief Economist, Department for Transport**

*'Towards a Sustainable Transport System'*, the Government's initial response to the Stern Review and Eddington Study published last November, accepted the latter's recommendations for a new approach to planning of transport policy, an important part of which involves upgrading of cost benefit tools to guide decision making. Eddington judged UK transport appraisal techniques to be world class, but advised a 'refresh' of NATA after a decade of use.

Eddington's identification of a four-stage policy making process (problem identification, option generation, prioritisation and appraisal), underpins his advocacy of a mode-neutral framework with the aims of taking better account of non-infrastructure interventions, giving consideration to packages and a clearer understanding of the linkages between transport and housing and of uncertainties.

NATA, focused on the third and fourth stages, requires strengthening in order to capture all the relevant impacts on the environment and people and ensure consistency across mode, location and scheme development. NATA Refresh is examining a range of environmental issues that include the scope for monetary valuation of transport impacts on landscape and air quality.

## **Questions**

Q. NATA normally applies to projects. You referred to NATA in relation to both policy and projects. Are you comfortable with the swapover?

A. Yes. Eddington found that development of transport policy often gives insufficient consideration to broader programmes of activity. Appraisal will look at both programme and project levels, though more tools for strategic work will be required.

## **2. Review of the Environmental Capital Approach in NATA**

**Paul Tomlinson, Head of Environmental Assessment, Centre for Sustainability TRL**

NATA, uses the qualitative 'Environmental Capital Approach' (ECA) in the appraisal of transport impacts on landscape, heritage of historic resources, biodiversity and water environment. The method set out in WebTag unit 3.3.6 comprises four main elements:

- a description of the characteristic features being appraised;
- an appraisal of the features - why they are important and to who;
- a description of how the proposals impacts on the environmental features;
- an overall assessment score using a 7 point scale.

NATA Refresh offers the opportunity for reviewing the ECA, WebTag guidance, the links between ECA, SEA and EIA and good practice in the field to establish coherence, consistency and transparency. Feedback on the draft TRL report for Natural England is invited.

A literature review revealed a lack of material on landscape or biodiversity appraisal (synthesis of key information), with the focus instead on environmental assessment (capturing of information). Environmental Capital requires an understanding of who is affected, but we do not have the knowledge at present, instead appraisal concentrates on physical attributes in particular those of designated sites. Scale is a key consideration because it determines the level of effort to be put into appraisal.

Appraisal places reliance upon professional judgment which could be better supported by an evidence base to improve transparency and repeatability of the findings. A central database storing agreed data would help here. Unless valuation is carefully applied issues can be hard to disentangle. A monetised landscape value might capture more than is picked up by landscape evaluation.

TRL's survey of practitioners revealed a lack of clarity about the links between WebTag and the Design Manual for Roads and Bridges. Criticisms of appraisal methods included excessive guidance, shortcomings of worksheets and reliance on subjective judgment without peer review to ensure consistency. Scrutiny of a number of scheme worksheets showed considerable variations in level of detail and the lack of an audit trail to get to evidence basis which underpins appraisal. There is also limited awareness of ECA among clients commissioning appraisals.

The overall conclusion drawn from the project findings is that ECA is a viable method, but some refinements are required for improving its application and ensuring a proportionate level of effort. They include the need to focus the level of information and reporting on that which is important, improving skills and ensuring that scores obtained

are translated to the Appraisal Summary Table. A further conclusion is that monetisation is not a solution as ECA is needed to underpin valuation. At a strategic level, the overarching question is whether environmental capital is being maintained within transport programmes and from the preponderance of negative scores across the range of transport schemes appraised, it would appear not.

A number of recommendations can be made for improving NATA, arising out of the findings:

- i) Enhancement of WebTag guidance to focus landscape and biodiversity on what is important. Revise worksheets to minimise duplication and detail.
- ii) Further research is needed, for example, the extent to which transport projects deliver across Government's objectives.
- iii) Address subjectivity through enhanced guidance, training and accrediting staff and benchmarking.
- iv) Put in place a review process system. All worksheets and ASTs should be published at key stages to drive up quality.
- v) Conduct regular evaluation of appraisal outcomes at programme level.

### **Questions**

Q. What are other countries' experiences?

A. TRL survey of NZ and Australian systems show some better/worse elements.

Q. Is it possible to integrate a hierarchy of approaches into NATA, starting with enhancement (of present landscape), followed by avoidance and mitigation last?

A. Unsure how it would fit at an individual scheme level other than making it clear that scheme should meet all objectives including environmental. The Australian system of appraisal requires that the trade off between different objectives is set by ministers at the commencement of projects rather than by project proponents.

### **3. NATA Refresh: Next Steps in Valuing Landscape**

**Peter Sellen, Assistant Economist, Integrated Transport Economics and Appraisal, Department for Transport**

The NATA assessment of environmental impacts under ten sub-criteria combines quantitative and qualitative analysis, the latter using the ECA method outlined by Paul Tomlinson, with the results presented in a series of worksheets and an Appraisal Summary Table. The landscape worksheet covers physical and cultural attributes and their importance to people. A separate but overlapping worksheet addresses heritage or historic resources. Landscape also overlaps with worksheets on biodiversity, townscape and noise, hence a danger of double-counting.

Currently, the impacts of transport on landscape are not priced, unlike noise, carbon and air quality. The aim of economic valuation is to capture the value of unpriced goods by testing individuals on their 'Willingness to Pay' to avoid a loss or achieve a gain or their 'Willingness to Accept' compensation for a loss or for foregoing a gain. A Total

Economic Value framework identifies the use and non-use headings for assessing the reasons why individuals value environmental goods.

There are a number of challenges in valuing the impact of a transport scheme on the landscape. Variables include the nature of the scheme and its irreversibility, features of the landscape and availability of substitutes. The characteristics of the affected population also vary greatly. Consideration must be given to all those affected, both residents and non-residents. People will value the impacts differently, depending on how they use or perceive the landscape.

The Department for Transport has commissioned a 3-stage project to develop transferable monetary values for the impacts of individual transport schemes on natural landscapes in England. To do this, we need to establish methods for measuring landscape impacts and attaching monetary values.

Phase 1 has involved developing a typology of landscapes and transport schemes to reflect the broad categories of landscape (mountains and valleys, moors, hills and dales, rolling lowlands, lowlands, coastal lands) that are affected by transport (new and single dual carriageway roads, new rail routes, road widening, park and ride). Consultants have devised a methodology to be used for developing transferable values between similar landscape types.

Phase 2 will design a method of valuing impacts of transport schemes of different scales on a variety of landscape types for testing on a sample population using a stated preference questionnaire. Phase 3 will conduct the main valuation exercise and test the validity of the results and transferability of the values.

There are a number of reasons for monetising environmental impacts. It would assist decision making by providing a common unit for weighing up and comparing impacts. It would facilitate consistent appraisal and enable comparison across schemes. Applying monetary values would better account for the environmental impacts of policies and in determining the levels of mitigation required. Overall, it would increase the weight given to landscape in investment decisions. Work on valuing the reduction of accidents has resulted in accident reduction being targeted.

The research project is due to complete in early 2009, with consultation on the findings. Any integration of monetary values into guidance would require Ministerial approval. It is important to emphasise that monetisation would not replace other appraisal and assessment processes; qualitative information would sit alongside the economic value in the Appraisal Summary Table.

### **Questions**

Q. Is monetary valuation happening in other EU states?

A. Other countries are moving forward economic valuation for some environmental factors, but not generally on landscape which is more difficult.

Q. Landscape is made up of a mass of variables. Are you valuing the whole or the component parts?

A. We would be valuing the impacts not the component parts per se.

Q. Concerned about transferable values.

A. We use some noise values across different schemes. We will not use different values for every single scheme, but we can apply appropriate weightings to individual landscapes. The challenge is to make values transferable. We are trying to value the impact of transport on a feature and how it interacts with other features. We can test to see if people understand that as a rational question.

Q. Could the outcome of this project be that this wouldn't work?

A. Yes.

Q. Could you explain more about double-counting?

A. People's valuation of a particular landscape might include its wildlife value which gets counted separately. People don't break their valuing into different components eg wildlife, amenity. They appreciate landscape as a whole.

Q. Landscape is constantly changing. How do you deal with that?

A. We are not dealing with a natural landscape anywhere. We have to consider future trends, an area where improvements in environmental appraisal are needed.

#### **4. Capturing the Full Value of Landscape**

**Anne Robinson, Trustee, Council for National Parks (CNP)**

Landscape is highly complex and dynamic. We experience landscape using all our senses. Landscape is an heirloom. It is vital for our survival, offering clean water, air, soil, etc and places to live, work and visit. The European Landscape Convention defines landscape as the relationship between people and place,

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

CNP has fundamental concerns about monetary valuation as applied to the transport impacts on landscape. We believe that quantitative analysis and economic valuation cannot capture the qualitative value of landscape and its intangible benefits such as aesthetics, spirituality and happiness. Economic valuation would value change in the landscape and not its absolute value, an impossible task in any case.

There are practical problems attached to valuation. Measured preference methods such as Willingness to Pay (WTP) may not ensure the best results for people and the protection of the environment. WTP may give a lower value for whole landscapes than for the sum of their component parts, with an artificial end date. WTP for environmental change is not the same as Willingness to Accept (WTA) compensation for loss of a good which is typically 5 – 14 times higher than WTP.

In order to value the impacts on landscapes, all relevant user groups need to be considered, but there are inherent difficulties in identifying and sampling the population.

Depicting change is equally fraught. Photographic and computer images show static snapshots and fail to communicate the rich experience of landscape. There is a high cognitive burden on respondents in stating preferences. Undercounting the benefits of landscape such as utility factors (eg flood protection) would lead to under-valuation.

Once economic values for transport's impact on a range of landscape types have been identified, the next step would be to transfer off-the-shelf prices to unique local landscapes affected by individual schemes. Such an exercise would raise serious concerns since there is an infinite array of landscapes and perceptions of them.

A hypothetical example of how the system might work in practice, drawing on a WTP exercise that set a value for preserving Scotland's mountain environment, illustrates the dangers. If the Scottish economic valuation figure was transferred to the smaller Southern Pennines Special Protection Area and the figure adjusted to reflect WTA, the estimated landscape valuation would be considerably lower than time savings benefits.

Recommendations for improving NATA's qualitative assessment of landscape include:

- i) the importance of recognizing all landscapes, coupled with the scrupulous application of PPS7.
- ii) the need for full public participation in landscape assessment.
- iii) landscape assessments which are independent of scheme promoters.
- iv) proper recognition in NATA of the qualitative impacts on landscape, with judgments at national level should be made jointly between DfT and Defra.

The Chair commented there was not a DfT proposal for monetary valuation for landscape.

## **5. Workshops**

**Two workshops were held in parallel, with discussions recorded at Appendix 1.**

### **1. Environmental Capital, Key Benefits and Challenges**

chaired by Kathleen Covill, Natural England/Paul Tomlinson

The purpose of this session was to enable practitioners to provide feedback to TRL for informing the final draft of research report.

### **2. Monetary and Non-Monetary Approaches: Strengths and Weaknesses**

chaired by Ruth Chambers, Council for National Parks

#### **An additional topic was discussed (Appendix 2)**

Towards a Sustainable Transport System and Environmental Challenges

Introduced by Graham Pendlebury, Director Environment and International, Department for Transport.

**The Chair thanked everyone for attending.**

## Appendix 1

### **Workshop I: Environmental Capital, Key Benefits and Challenges** **Led by Kathleen Covill, Senior Specialist, Planning, Transport and Local Government Team, Natural England and Paul Tomlinson, TRL**

#### **1. Views on ECA as a method**

Understanding of ECA – it involves:

value/rarity

irreversibility

heritage biodiversity landscape

complex grouping of issues

Who – difficult to identify

Who - use is not perceived clearly by people or may be if the terminology is right

| <b>Strengths</b>   | <b>Weaknesses</b>  |
|--|--|
| <ul style="list-style-type: none"><li>- in theory values Who as well as What</li><li>- draws on Landscape character assessment/EIA/LVIA</li><li>- biodiversity score is more easily replicable</li><li>- 7 point scale</li><li>- good understanding of EC. Our environment is an asset and we either add to or subtract from it, depending on scheme. Key issue is whether you can keep on adding to EC.</li></ul> | <ul style="list-style-type: none"><li>- little scope for public participation</li><li>- identifying Who is not easy</li><li>- Guidance difficult to follow – not an easily replicable process</li><li>- Transparency – depends on professional judgment</li><li>- Visual intrusion not picked up/impacts on receptors</li><li>- ECA doesn't pick up cumulative effects</li></ul> |

#### **2. Opportunities/Enhancements to appraisal guidance on the environment**

opportunities – applicable beyond transport

enhancements - understandable, repeatable

- peer review would be useful to ensure accurate process with robust outcomes

- who is affected should be a row on the worksheets

- worksheet should pick up visual intrusion – STAG has separate worksheet

- LVIA (Landscape Visual Impact Assessment) picks up magnitude etc – this should be used in NATA

- early stage appraisal – could have 4 scores rather than 7.

#### **3. Other issues**

European Landscape Convention sign up

Programme level assessment of EC as well as project level

Understanding of the approach

- Structured quality approach to aid appraisal of impacts

- Capital : Stock (implies measurability and value) – that's improved or degraded

- Trend – does capital improve or degrade outside of a project?

Is Capital finite?

**Workshop 2: Monetary and Non-Monetary Approaches, Strengths and Weaknesses**  
**Chaired by Ruth Chambers, Deputy Chief Executive, Council for National Parks**

**1. Challenges of attaching monetary values to landscape**

| <b>Benefits</b>  | <b>Disbenefits</b>  |
|--|---|
| <ul style="list-style-type: none"> <li>- Assists funding decisions</li> <li>- Could ensure inclusion of landscape so long as value is high</li> <li>- assignment of monetary values helps in deciding how best to allocate limited resources (incl. natural resources, time) and is current best measure of human happiness</li> </ul> | <ul style="list-style-type: none"> <li>- Current system gives some precision</li> <li>- Impossible to calculate a £ price - moral objection</li> <li>- Concern about low values</li> <li>- Different landscapes require different approaches/methodologies</li> <li>- No faith in underlying assumptions</li> <li>- Discount rate – how do we take into account views of future generations?</li> </ul> |

**2. How and whether challenges might be addressed?**

- constant improvement of evaluation tools
- better feed back from practitioners
- building up appraisal database
- check past/existing schemes against monetary values to check outcome the same
- start by identifying problem and not (road) solution (follow Eddington policy-making process)
- participation techniques for involving local communities eg citizens' juries
- set minimum standards
- give greater value to future generations

**3. Alternative, non-monetary approaches to ensure that the value of landscape is given proper weight in decisions**

- better community participation
- employ independent assessors to conduct NATA assessment and post-opening evaluation (downside is that a single snapshot in time could lose benefits of involving a contractor throughout evolution of scheme)
- incentives to ensure that environmental impacts are properly assessed
- strategic appraisal to consider options at early stage
- protect landscape value through designation status
- proper resourcing for statutory bodies to evaluate assessments
- training DfT staff in landscape

## **Appendix 2: Towards a Sustainable Transport System (TaSTS) - Environmental Challenges**

Introduced by Graham Pendlebury, Director, Environment and International, Department for Transport.

TaSTS identifies five goals of equal status:

- Competitiveness and Productivity
- Climate Change
- Equality of Opportunity
- Health, Safety and Security
- Quality of Life

Graham invited stakeholder contributions on the main strategic challenges facing the UK as we move towards a sustainable transport system, from the perspective of environmental quality.

The two workshops generated the following ideas:

- How do you reward innovation?
- Adverse impacts of transport
- Delivery of environmental benefits through transport programme is not being realised
- People benefiting from transport are not those affected by the disbenefits
- Infrastructure tends to degrade rather than enhance and conserve the environment
- Environmental enhancement/conservation are not incentivised
- Lack of professional skills around landscape and transport infrastructure
- Limiting climate change is of overriding importance
- De-couple economic growth from transport – but how?
- Need for an independent assessment of economic benefits
- Need for joined up thinking – inside and between Government departments in decisions on objectives, policies and implementation
- How to provide sustainable transport and other services for 3 million new homes
- Increasing access to the countryside by non-car modes
- Need for behavioural change as well as new technology.