

Framework to Assess Environmental Costs and Benefits For a Range of Total Water Management Options

In the R&D project 'The Economics of Demand Management' (R&D Technical Report W45) steered by the water companies, OFWAT and the Environment Agency the general objective was stated as 'to minimise the net social cost of balancing supply and demand for water in the future'. The net social cost includes the 'net environmental cost or benefit through changed water abstraction and return patterns.' Whilst there is company and regulatory agreement on this principle, at present such costs can only be determined by expensive surveys. In an initial appraisal of a range of demand management and resource develop options, water companies could not realistically be expected to carry out such surveys. A method of approximating environmental costs and benefits was therefore required with a view to confirming these (or otherwise) at a later date by for example a contingent valuation survey.

The aim of the study was to review work on environmental costing techniques in order to devise a methodology for evaluating environmental costs and benefits for a range of water demand management options in the initial stages of planning.

The produced methodology is split into two main stages:

1. *Environmental Appraisal*, which involves identification of environmental effects and prediction of their likely significance.
2. *Valuation*, which involves the identification and measurement of external effects. Where possible the measurement of external environmental effects are monetary. As this is not always possible there is also guidance on non-monetary indicators, which can be used in the absence of monetary valuation.

The methodology enables the evaluation of environmental costs and benefits of total water management options leading to full consideration of environmental issues in the decision making process. Application of the methodology allows a systematic evaluation of total water management schemes and a basis for judging environmental and social costs within the traditional cost-benefit analysis.

At this time, however, the methodology is hindered by a lack of suitable existing valuation studies. Development of the methodology should be undertaken to establish the following:

- Translation of all environmental effects into 'wellbeing' effects (any change in human wellbeing) that can be measured in monetary units.
- Additions to the monetary valuation literature in order to fill the current gaps. There are currently a range of effects of total water management options for which no or inadequate valuation studies exist. Examples of these include social costs of customer side measures and a marginal change in water quality or flow.

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This project will be taken forward in due course by Water Resources, Head Office, after considering how best to address the areas of commonality between the results of this project and a research project recently completed by UKWIR (distribution also restricted outside of UKWIR).

This R&D Technical Summary relates to information from Project W6-030 contained in the following output:

R&D Technical Report W156: Framework to Assess Environmental Costs and Benefits
For a Range of Total Water Management Options

Internal Status: Released to Regions

External Status: Restricted

Project Manager: Debbie Jordan, North West Region October 1998

Research Contractors: EFTEC, CESERGE and CES

Copies of these documents are available internally from the Regional Information Libraries or the National Information Centre in Bristol, and externally from Environment Agency R&D Dissemination Centre, WRc (Tel: 01793 511711, Fax 01793 514 562).

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