

1 How to use this review

1a About the review

Introduction

- 1.1 Welcome to MEBIE 2! The original Microeconomic Evidence for the Benefits of Investment in the Environment (MEBIE) was designed to assist Natural England staff in understanding the benefits of the natural environment. It has been used widely, both within and outside Natural England, since it was first published in 2012.
- 1.2 This version of MEBIE incorporates over 100 new pieces of evidence, and a simplified format. It includes new chapters on Consumer spending, Pollination and Pest control, and existing chapters have been extensively revised.

What is this review for?

- 1.3 MEBIE is a guide to relevant evidence on the benefits of investment in the natural environment, with a particular focus on England. This is of interest to decision makers such as Local Authorities and Local Enterprise Partnerships. However, no claim is made to cover this area exhaustively and new research is continually emerging.

How can the review help you?

- 1.4 We have thoroughly reviewed the literature for the benefits of investment in the environment, and only included that which meets national government standards, so you can use the evidence presented here with confidence. MEBIE highlights potential benefits, reviews the evidence for them and gives references to support the case. It also highlights contextual limitations and uncertainties, to provide you with a well-rounded understanding of the issues involved. A methodology section is provided in Appendix 1 to provide transparency as to the depth of the review undertaken.

What are its limitations?

- 1.5 Often the perfect example you are looking for will not exist. In these cases you can use MEBIE to demonstrate the weight of evidence around a particular benefit. MEBIE can also point to relevant case studies that are useful in making the case. In many cases, explaining the argument based on the existing evidence and case studies may be sufficient. MEBIE does not provide you with the information needed to estimate the economic benefits of your specific project. It may be possible to undertake a value transfer, in which values are inferred from similar studies, and tools are available to assist with this¹, however it is highly recommended you seek advice from an economist before proceeding.

Why should you read the rest of this chapter?

- 1.6 An essential introduction to economic evidence can be found in [Section 1b](#). This will assist you in understanding the figures provided and presenting them correctly to stakeholders.

¹ For a review of available tools, please see Natural England and other parties (2013) Green Infrastructure – Valuation Tools Assessment: <http://publications.naturalengland.org.uk/publication/6264318517575680>.

- 1.7 **Section 1c** provides a useful orientation to the document structure so that you will be able to use it much faster and more effectively.

Feedback

- 1.8 Feedback on this review is very welcome. Please send comments and suggestions to sophie.rolls@naturalengland.org.uk.

1b Introduction to economic evidence

Purpose of this section

- 1.9 This evidence package is designed to help you make robust, evidence based arguments for the benefits offered by the natural environment, demonstrating that investment in the environment represents a rational use of limited funds. In order to do so however there are some economic terms and approaches you need to understand. This section provides a 'bare-minimum' account of these terms.

Counterfactual or baseline

- 1.10 All the economic evidence in this package refers to the benefits derived from an *improvement* in the natural environment, or the loss caused by *damage* to the natural environment. That is to say it's all about a **change** in the environment. For example, you can't put a value on Dartmoor, but you can value the difference in the benefits of freshwater from Dartmoor under two different management scenarios (for example increasing Dartmoor's woodland cover by 10 per cent, compared with keeping it at its current level). What we value is the project, not Dartmoor itself! This means that evidence is based on the difference between what happens because of the project and what would have happened anyway, which is known as the counterfactual or baseline position.

Impact and value

- 1.11 When dealing with economic evidence, it's very important to understand that numbers which refer to economic benefits can refer to two very different things – economic IMPACT (the effect on Gross Domestic Product, or GDP, whether positive or negative) and economic VALUE (the total effect on the welfare of the individual whether caused by changes to consumption of traded goods, or more intangible things such as the beauty of a landscape²). The economic value approach forms the basis of Cost Benefit Analysis, which is the UK Government's dominant decision making framework (HM Treasury 2003). The distinction between IMPACT and VALUE is very important so when quoting a figure from the evidence package be sure that you understand which it refers to.

Double-counting

- 1.12 When presenting economic evidence it is essential to avoid counting the same benefit twice, otherwise you undermine the credibility of your evidence base. For example, evidence about how much being near a park increases houses prices is likely to be based on the aesthetic benefits of the park and so these should not both be counted. Because of this, particular care should be taken when combining evidence from Chapters 3 and 4.

² For intangible or non-market goods, this value can be estimated using a variety of techniques such as revealed or stated preference approaches. Further detail on these approaches is available in HM Treasury (2003). The Green Book: Appraisal and Evaluation in Central Government. London, HM Treasury.

Timeframe

- 1.13 When quoting numbers, it's very important to be clear about the timeframe for the numbers you're quoting. For example, is a benefit of £1 million a one-off benefit, or is it likely to recur? And, if so, how long can it be expected to recur on the basis of the investment under consideration?

Environmental justice

- 1.14 There is good evidence that environmental benefits are unequally distributed through society, with disadvantaged groups having poorer access to the natural environment (for example, see Fairburn and Smith 2008 for a discussion of the situation in South Yorkshire). In policy terms environmental injustice might be an important motivating factor for an environmental intervention. For example, improved green space in a deprived part of the inner-city might lead to a better health improvement than in a wealthy area which was already well endowed with green space. This means that for some of the environmental interventions discussed, knowing as much as possible who the beneficiaries are is important.

Context for large numbers

- 1.15 Environmental benefits are often significant, and therefore involve large numbers. Some audiences may lack context for large numbers, and some are offered for context below:
- Total UK Government spending in 2012-13 = £674 billion (HM Treasury 2013).
 - Total UK Government spending on environmental protection in 2012-13 = £11.1 billion (HM Treasury 2013).
 - Bristol City Council budget in 2012-13= £366 million (Bristol City Council 2013).
 - Average house price in Bristol between April and June 2013 = £214,000 (average £385,000 for a detached house, or £183,000 for a flat) (BBC 2013).

1c How to use the review

- 1.16 This section provides an orientation to the structure of the review, which is designed to be used as a reference document, rather than read from cover to cover.

How to find what you are looking for

- 1.17 If you know what sort of evidence you are looking for, scanning the contents pages should allow you to quickly locate it. However, if you don't, turn to **Chapter 2** which provides short essays on key themes with links to the relevant evidence. **Chapter 3** provides evidence about traditional economic concerns. This evidence draws on a much broader suite of evidence about ecosystem services which is presented in **Chapter 4**, using a methodology adapted from Department for Environment, Food and Rural Affairs (2007). Sub-chapters within Chapters 3 and 4 are in alphabetical order.

Section structure

- 1.18 **Chapter 2** takes the form of thematic essays, but **Chapter 3** and **Chapter 4** are divided into sub-chapters presenting a particular benefit. Sections vary according to the needs of the evidence presented, but generally look like the following example.

1d Environmental benefit example

One or two sentence summary of the evidence.

Introduction

This section will explain the benefit under discussion, what is included and excluded and how it fits into economic theory.

Theory of change

This subsection will present the proposed benefit in terms of a theory of change which links an environmental improvement with a benefit to society (stylised example given below). If any of the links in the theory is broken (for example, if there is no evidence linking a proposed improvement with a resulting change in environmental service), this may bring into question the entire benefit being examined.



Can the benefit be quantified?

This subsection will consider whether it is possible to appropriately quantify the relationships in the theory of change, and the barriers to doing so. This provides essential context to the 'how strong is the evidence?' subsection, because the strength of the evidence needs to be considered relative to the field of knowledge it is in. For example strong evidence for causal links can be more difficult to achieve in the social sciences, than in the natural sciences.

How strong is the evidence?

This subsection will review the relevant literature and provide an assessment of the strength of the evidence connecting the theory of change, including any key uncertainties and contextual factors.

Evidence

This section will contain any evidence which can be used to support the case for a particular benefit. Robust quantitative and qualitative evidence will be presented. The wording of this section has been chosen carefully to identify the environmental benefits whilst representing the research accurately. The footnotes in the section are very important because they provide background to the information presented, and note any contextual limitations of the study.

Link with climate change

Where the case for the benefit is strongly related to climate change this section will explain the link and offer any relevant evidence. Climate change has been singled out as a priority because it is one of the most significant sustainability challenges of the 21st century and therefore receives a great deal of attention from *economic* as well as environmental policy.

References

References for each piece of evidence are conveniently presented at the end of each chapter, rather than at the end of the report.

References

BBC. 2013. "UK house prices: April to June 2013." Retrieved February 17, 2014, from http://news.bbc.co.uk/1/shared/spl/hi/in_depth/uk_house_prices/html/hb.stm.

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