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BASELINE EVALUATION OF ENVIRONMENTAL APPRAISAL AND SUSTAINABLE DEVELOPMENT GUIDANCE ACROSS GOVERNMENT.

FINAL REPORT

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Baseline Evaluation of Environmental Appraisal and Sustainable Development Guidance Across
Government

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Executive Summary

This report presents results of research into the use of environmental appraisal and sustainable development guidance in impact assessments across government. This is a baseline study insofar as there are no previous assessments on this issue with which it can be readily compared. This study is intended as a constructive contribution to building capacity across Government to support the mainstreaming of natural value and sustainable development as set out in 2011 in the Government's Natural Environment White Paper and the Government's Vision for Mainstreaming Sustainable Development. Impact Assessment plays a key role in both these agendas within the policy process, in demonstrating the full range of relevant impacts and assessing the balance of costs and benefits of prospective policies.

This research seeks to fill the need for meaningful evidence, qualitative and quantitative, of the extent, quality and impact of, and barriers to, uptake of appraisal guidance on sustainability and natural value considerations. This includes the need to monitor progress since changes to the Impact Assessment (IA) toolkit in August 2011, and also more recent changes including the publication of Supplementary Green Book Guidance on "Accounting for environmental impacts" (2012). Most recently, Impact Assessment guidance has been consolidated in the Better Regulation Framework Manual (BRFM).

The research comprised a desk study of sustainable development appraisal in IAs published between August 2011 and the end of 2012, an extension of this study to cover a sample of IAs published between 2008 and August 2011, and a second more detailed study of environmental appraisal in a sample of these IAs. This quantitative assessment was supplemented by qualitative insight from interviews with 16 officials, primarily senior economists, but including junior up to Chief Economist level, and from 7 departments. In addition, a number of case studies are included in the report which illustrate some practical applications and challenges.

Our overall assessment from the review of sustainable development appraisal is that slightly over half (58%) of IAs are striking an appropriate balance, in terms of identifying and addressing appropriately all the impacts, or all the impacts that are proportionate to assess. About a quarter (24%) are identifying all the impacts but could improve rigour of analysis, and about a fifth (19%) are missing some sustainable development impacts that ought to have been considered. While over 80% of IAs treat economic impacts with medium or high rigour, 52% and 50% of IAs respectively treat social impacts and environmental impacts with low rigour or not at all.

There is no evidence for any systematic change in appraisal quality or treatment of sustainable development issues over the time period assessed. There is no evidence for any systematic difference in the quality of sustainable development appraisal across departments. And there is no evidence that the size of the policy (in Net Present Value terms) influences the quality of the IA.

For environmental appraisal, results show that ‘High’ impacts tend to be treated in some detail, ‘Low’ impacts are often ignored, and ‘Mid’ impacts tend to be addressed in superficial or partial fashion. We observed no cases in which “wider environmental impacts” (as defined in the IA toolkit) that we deemed highly significant were given no effort or only superficial effort, providing some comfort that significant environmental impacts are not being overlooked; though full quantification and monetary valuation remain relatively rare. Waste and air quality impacts were the most likely to be expressed in monetary terms, and to have physical and/or value uncertainty considered. Around two-thirds of IAs identifying environmental impacts, and three-quarters of IAs identifying social impacts, assess these impacts in a primarily descriptive fashion. Around one in eight treats environmental impacts in a primarily quantified or monetary fashion.

The ecosystem services framework goes beyond “wider environmental impacts” by setting impacts in the context of an ecosystem approach, but this thinking and its associated language and guidance have not yet had time to be fully adopted in IA practice. In the IAs examined, impacts on cultural services, specifically recreation and aesthetic impacts, were most often overlooked.

There is no direct connection between the “wider impacts” and ecosystem services considered in IAs. Vulnerability to the effects of climate change, noise, and biodiversity impacts do not appear directly in the list of ecosystem services; conversely, the impact on the ability of ecosystems, for instance, to regulate water quality or to provide cultural, recreational and provisioning services do not directly appear in the “wider impacts” list. The ecosystems framework also provides a holistic approach to identifying potentially multiple impacts. So these approaches are more complementary than alternative. But it is a little early to say how ecosystem service thinking / framework is likely to influence IAs. This is still a work in progress, and awareness is not yet high. Further work to check on this in a year or two would be useful.

Overall the feeling from interviews was that the extent of guidance was “about right”, but that the accessibility of guidance, and the integration between the Green Book and other guidance documents, could be improved. Several interviewees noted their departments’ interests in better quantification and monetisation of key impacts in their sectors, while also stressing proportionality and feasibility. The extent to which wider impacts are taken into account is constrained by the need to maintain proportionality in the appraisal, and this is well recognised. Robustness and the ability to defend values was seen as important.

Guidance is not always used. Partly this is because people who are used to doing IAs do not feel the need to turn to the guidance when conducting ‘standard’ appraisals: they engage with the guidance for specific reasons, to deal with a new problem, rather than as a matter of course. One way to encourage more systematic use of

guidance is working to integrate new guidance into tools and frameworks that are regularly used; and this is indeed being done in some areas.

Where guidance is not followed at all, this could be considered more of an institutional/cultural problem than a shortcoming of guidance. Influencing policy development across Whitehall may be achieved more effectively through focusing on key drivers of environmental policy than by changing guidance. The key challenge is to develop a culture within other departments, including at senior level, that expects environmental impacts, and more generally sustainable development, to be taken seriously.

Regarding monetisation, there was quite widespread agreement that failing to monetise risks environmental and social impacts being underweighted in appraisal. Some areas are definitely perceived as well-researched. Carbon valuation, value of life, value of injury are all seen as robust. Other areas have varying levels of evidence available: in many cases, the missing evidence is not so much monetisation evidence as the scientific evidence to link policy changes to environmental impacts and changes in services.

There is certainly an appetite for improved evidence, partly due to the success of existing monetary valuation approaches such as the carbon guidance. Particular gaps and priority areas identified in the interviews include:

- Land/ land-use related areas: further work in drawing together and improving the evidence base for value transfer would be useful.
- Work to make better use of evidence for assessing impacts on water quality.
- Further habitat-by-habitat valuation of services would be very useful, including meta-analyses for different habitats where these are currently not available: a review of areas for which sufficient evidence is available to make such studies feasible could be carried out.
- Development of more analyst-friendly and spatially specific tools for valuing recreation impacts (using the Monitor of Engagement with the Natural Environment).
- Consider carefully the potential for wider use of cost-based estimates where appropriate and where value-based estimates are not available, or where their complexity means they are not being used outside departments with a core focus on the issue.

The following headline conclusions can be drawn from the research:

When policy proposals have potentially material impacts on sustainable development issues:

- 1. Over half of IAs assess sustainable development issues in an appropriate and proportionate manner;**
- 2. Quarter of IAs could improve rigour of analysis, in particular for social and environmental aspects; and**
- 3. A fifth of IAs omit some possible impacts, however omissions of potentially major impacts are very rare.**
- 4. ‘Serious omissions’ of “wider environmental impacts” are very rare. On the other hand, omissions of less significant effects are common, affecting around half of wider environmental impacts identified.**
- 5. Certain ecosystem services, in particular cultural services, can tend to be overlooked.**

Ecosystems services language has not yet been widely adopted in IAs. In most cases for where ecosystem service impacts are identified, they are not discussed in much detail; monetary valuation remains rare.

Guidance, including recent changes to it, is of good quality. Particular challenges for increasing uptake are:

- 1. Creating a culture across government that expects environmental and social impacts to be taken more seriously, and addressed and valued alongside other (especially economic/business) impacts; and**
- 2. Finding better evidence and novel methods for expressing environmental and social impacts in monetary terms, where appropriate and feasible.**

Support is needed across government in the following areas:

- 1. Supplementing guidance with strong training in its use;**
- 2. Integrating new ideas and methods within the existing appraisal frameworks of different departments;**
- 3. Providing default values for some impacts, to be used where the impacts might otherwise be overlooked; and**
- 4. Monitoring the uptake of recent guidance in government appraisal, and making further adjustments to guidance and training if appropriate.**

The methods used in the research are discussed in Annex 1; the following is a short summary. There were three main components: a general assessment of the treatment of sustainable development issues in Impact Assessments (initially from August 2011 and later extended back to 2008); a more detailed assessment of the treatment of environmental issues in IAs; and interviews with civil servants regarding the IA process.

The first stage database was centred around two questions:

Q1: Were all relevant sustainable development impacts appraised proportionately? This included assessment of the extent to which all material impacts were identified, the methods by which impacts were assessed (e.g. the qualitative, quantitative, monetary methods), and the rigour with which they were treated.

Q2: Should the 3 Pillars have been accounted for at all, given the scale of potential costs/benefits of policy? Would a proportionate IA have accounted for the impacts? This involved consideration of the significance of the impacts, in the context of the overall size of the policy.

The IA toolkit indicative list of questions to address when considering potential impacts was used to guide determination of whether proposals have impacts.

An overall assessment was made of the extent to which the IA had identified all impacts, and treated them with proportionate rigour. These were (unavoidably) subjective judgements based on the understanding and expertise of the researchers.

The second stage database focused on environmental appraisal using two different frameworks, the “Wider Environmental Impacts” tests, and the “Ecosystem Services” as presented in the supplementary guidance. The approach was broadly similar, focusing on the significance of any impact, the effort and method of its assessment, and the treatment of uncertainty. Again, the data recorded are the best subjective judgements of the researchers, based on the evidence presented in the IA document and on their own knowledge of environmental policy and valuation.

The interview protocol was developed over several iterations with the research team and Defra, focusing in particular on the ‘effectiveness’ of environmental appraisal guidance and broader sustainability guidance (is it used appropriately, does it help ‘joined up thinking’ about sustainable development?) and trends in accounting for sustainable development/environmental impacts. The interviews were semi-structured and did not seek to follow a set order of questions. In particular, the interviews were shaped by discussion of interviewees’ actual experiences with IAs and business cases. For each interview, we prepared a summary of key points for comment and sign-off by interviewees.

1. Introduction

1.1 Objectives

The overall aim of the project is a baseline evaluation of the uptake and application of (natural) environmental valuation and appraisal and sustainable development appraisal guidance across Government Impact Assessments and business cases, in order to assess progress and inform future priorities and initiatives to build capacity and future monitoring.

In February 2011, the Government published its Vision for Mainstreaming Sustainable Development across departments' policies and practices. In broad terms, the approach to mainstreaming consists of providing Ministerial leadership and oversight, leading by example, embedding SD into policy, and transparent and independent scrutiny.¹

The Natural Environment White Paper (NEWP) published in June 2011 points out the virtues of accounting for all the economic and non-economic benefits we get from ecosystem services in exercising judgement about how we use our environment. The NEWP stresses the Government's commitment to consider fully the value of nature in its policy-making, and this forms part of the approach to mainstreaming sustainable development. One of the commitments in the NEWP was to publish Supplementary Green Book Guidance on accounting for environmental impacts in policy appraisal: this was published in February 2012, building on the existing guidance and literature on valuing environmental impacts, and developing it further by recommending the use of ecosystem services as a framework to ensure the full range of environmental impacts are considered.

This project seeks to fill the need for meaningful evidence, qualitative and quantitative, of the extent, quality and impact of, and barriers to, uptake of guidance. Whilst the need for evaluation in this area has been relatively long-standing, it has recently been formalised in commitments to two parliamentary committees:

1. Environment, Food and Rural Affairs (EFRA) Select Committee inquiry into the Natural Environment White Paper which recommended interdepartmental training on ecosystems assessment, and to review uptake of the new Supplementary Guidance published in February 2012. In response, Defra committed to report on uptake of guidance to EFRA later in 2013.

¹ <http://sd.defra.gov.uk/documents/mainstreaming-sustainable-development.pdf>

2. In a public hearing with the Environmental Audit Committee in its inquiry into Embedding Sustainable Development, Defra highlighted this proposed review in the context of sustainable development guidance in Impact Assessments, following the changes to Impact Assessment toolkit in August 2011.²

The specific research questions identified were to

1. Broadly assess how sustainable development issues are incorporated within published Impact Assessments (IAs) produced since August 2011, and before that date³;
2. Make an in-depth assessment of the extent to which Departments have used environmental appraisal guidance in Impact Assessments and (where possible) Business Cases over the last 2-3 years;
3. Evaluate the effectiveness of environmental appraisal and (where appropriate) broader sustainability guidance;
4. Assess how the application of environmental appraisal and sustainability guidance makes a difference in policy terms; and
5. In light of the findings, make recommendations for the short and medium term to assist future mainstreaming of sustainability approaches and accounting for environmental impacts.

1.2 Current guidance situation

The IA guidance on the gov.uk website includes a range of documents and sources. The Green Book⁴ remains the overarching reference for appraisal and evaluation in

² <http://www.publications.parliament.uk/pa/cm201213/cmselect/cmenvaud/c327-i/c32701.htm>

³ An earlier interim report related to the first task in the project, a desk-based analysis to “Broadly assess how sustainable development issues are incorporated within published Impact Assessments (IAs) produced since August 2011.” The results of that first stage were fed in to Defra’s cross Government report on Progress in Mainstreaming Sustainable Development that was published in May 2013. Then, in order to provide a clearer and more robust baseline, a second analysis covering earlier appraisals from the period (January) 2008 - August 2011 was also carried out. This enabled progress to be tracked since Government changed the Impact Assessment toolkit in August 2011 (see below), thus potentially revealing changes over the period, and providing a framework for potential on-going monitoring of appraisals in future years. A second interim report presented the overall assessment of appraisals from 2008-2012 and was published in July 2013 (<http://sd.defra.gov.uk/gov/approach/research-and-evidence/>). The present report includes that information, and also the results of more detailed desk research and interviews to address points 2 to 5 in the list above.

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government. More specific guidance on Impact Assessment is available in several places; this guidance has now been brought together in one place as the Better Regulation Framework Manual (BRFM)⁵. However this was published in July 2013: the IAs considered in this research, and the interviews, pre-dated this. The most recent relevant developments prior to the research were the Government's revision to the Impact Assessment Toolkit in August 2011, and the publication of Supplementary Guidance on Accounting for Environmental Impacts in February 2012.

Guidance available before (and still available now) includes:

- Overview of IA⁶
- IA Guidance: When to do an Impact Assessment⁷;
- IA Template⁸;
- IA Toolkit: How to do an Impact Assessment⁹; and
- IA Calculator¹⁰.

Various supplementary guidance and guidance on specific impact tests was (and remains) also available. A full list is available on the gov.uk website;¹¹ important examples for the current sustainability context include

⁴ <https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-government>

⁵

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/211981/bis-13-1038-better-regulation-framework-manual-guidance-for-officials.pdf

⁶ <http://www.bis.gov.uk/assets/biscore/better-regulation/docs/i/11-1110-impact-assessment-overview.pdf>

⁷ <http://www.bis.gov.uk/assets/biscore/better-regulation/docs/i/11-1111-impact-assessment-guidance.pdf>

⁸ <https://www.gov.uk/government/publications/impact-assessment-template-for-government-policies>

⁹ <http://www.bis.gov.uk/assets/biscore/better-regulation/docs/i/11-1112-impact-assessment-toolkit.pdf>

¹⁰ <https://www.gov.uk/government/publications/impact-assessment-calculator--3>

¹¹ <https://www.gov.uk/government/organisations/hm-treasury/series/the-green-book-supplementary-guidance>

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- Accounting for environmental impacts¹²
- Valuing impacts on air quality¹³
- Accounting for the effects of climate change¹⁴
- Valuation of health and safety benefits¹⁵

The Accounting for environmental impacts also links to Defra's Climate Change adaptation supplementary guidance and Defra's environmental noise tools, although these were not considered separately in the study and were not mentioned in any interviews. The IA Toolkit (August 2011) sets out an indicative (but not exhaustive) checklist of economic, social and environmental questions that should be considered in appraisal, and includes links to Green Book guidance plus further departmental guidance on specific issues and Sustainable Development. The checklist has been used in this research to give guidance on what to consider when determining whether proposals have impacts.

The Impact Assessment Process involves 7 steps, basically aligned with the broad stages of the policy cycle known as ROAMEF (Rationale, Objectives, Appraisal, Monitoring, Evaluation and Feedback), as highlighted in the Green Book. The 7 steps are aimed at providing a structured, strategic approach to policy development, breaking the process in to manageable parts:

- Step 1: Identify the problem;
- Step 2: Specify desired objectives;
- Step 3: Identify viable options that will achieve the objectives;
- Step 4: Identify the impacts;
- Step 5: Value the costs and benefits and select best option ;

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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191500/Accounting_for_environmental_impacts.pdf

13

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/197893/pu1500-air-quality-greenbook-supp2013.pdf

14

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191501/Accounting_for_the_effects_of_climate_change.pdf

15

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/191505/Valuation_of_health_and_safety_benefits.pdf

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- Step 6: Consider enforcement and implementation issues; and
- Step 7: Plan for evaluation and evaluate implemented policy.

The following checklist from the IA Toolkit (August 2011) sets out an indicative (but not exhaustive) list of economic, social and environmental questions that should be considered in appraisal. This list was used to guide researcher decisions regarding the significance of impacts

Economic / Financial

- How will proposals impact on the market and specifically consumers and businesses? In particular, consider the impacts on small and start-up businesses.
- If there are costs to business, i) do proposals include exemptions for micro businesses and ii) have any costs under One-in, One-out been offset?
- Will all businesses be affected in the same way, or will there be some that benefit, while others bear costs?
- What are the expected impacts on the wider economy (e.g. labour market)? The market and specifically consumers and small businesses?
- What are the impacts on competition? Will the number or range of suppliers be limited? Will their ability to compete be limited or the incentive to compete vigorously be reduced?
- Will proposals impact on innovation e.g. new low carbon technologies?
- What are the expected financial and resource impacts on other Departments?

Social Will proposals have an impact on social, wellbeing or health inequalities?

- Will proposals influence safety at work or risk of accidents in the community?
- Will proposals affect the rate of crime or crime prevention or create a new offence/opportunity for crime?
- Will proposals affect the levels of skills and education?
- Will proposals affect provision of facilities or services that support community cohesion or in other ways that affect the quality of life in the local community?
- Will the impacts on rural areas be different to urban areas? Will there be specific regional or local effects?
- What are the impacts on human rights (right to life, liberty and security, a fair trial and prohibition of torture, slavery, forced labour)?
- Do the proposals impact on the responsibilities under the Equality Act 2010 i.e. do they impact on age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation?

Environmental

- Will proposals lead to change in the emission of Greenhouse Gases?
- Will proposals be vulnerable to the predicted effects of climate change?
- Will proposals lead to a change in the financial costs or environmental and health impacts of waste management?
- Will proposals impact significantly on air quality?
- Will proposals involve any material change to the appearance of the landscape or townscape?
- Will proposals change the degree of water pollution, levels of abstraction of water, exposure to flood risk?
- Will proposals affect the number of people exposed to noise or the levels of exposure, or impact on the number of people suffering from nuisances on the streetscene?

Box 1: Impacts checklist from the IA Toolkit (August 2011)

Through Steps 2 and 3, viable options to achieve desired objectives are identified. Options must be assessed against the 'do nothing' situation to help draw out the implications of no action. For each option, an assessment should be made of the likely impacts that are likely to result: Step 4. The proportionate assessment of the impacts that are likely to result from each option should address issues relevant to appraisal and evaluation, including economic, environmental and social issues, and impacts should be monetised where it is feasible and proportionate to do so. Recent supplementary Green Book guidance on accounting for environmental impacts provides step-by-step guidance on the types of impacts for which monetisation techniques might be appropriate.

The main changes to the IA template since the Coalition government came into power include:

- Boxes for the One in One Out balance on the summary sheet (this became One in Two Out as of 1 January 2013¹⁶);
- Boxes on costs to business in the summary sheets;
- Regulatory Policy Committee (RPC) opinion box status added; and
- Removal of the separate Specific Impact Tests (SITs) section. Only relevant SITs are included in the main analysis, allowing all impacts to be assessed together in a coherent way. The SIT guidance still exists but is only used if the test is deemed relevant for the IA in question. The box on greenhouse gas emissions on the first page of the summary sheet remains.

Interviews with government officials, conducted for the later phases of this research, have suggested that these changes, and the supplementary guidance, should be considered as incremental steps in a general process of update and improvement, not as radical or revolutionary change.

1.3 Previous Research

The National Audit Office (NAO, 2009) undertook an appraisal¹⁷ of IAs following the introduction of the revised Impact Assessment process by BRE in 2007. The appraisal identified that the introduction of a new template, guidance and training improved the clarity of presentation in IAs. This resulted in greater consistency in providing requested information, and a greater incidence of quantification. Nevertheless, the standard of IAs appraised varied widely, and there was insufficient analysis of

¹⁶ <http://news.bis.gov.uk/Press-Releases/-One-in-two-out-Government-to-go-further-and-faster-to-reduce-burdens-on-business-and-help-Britain-compete-in-the-global-race-6838c.aspx>

¹⁷ ¹⁷ National Audit Office (2009) Delivering High Quality Impact Assessments

evidence in the weaker IAs. The appraisal highlighted that appreciating the fact that the level of analysis should be proportionate to the scale of the problem under consideration, 60 per cent of IAs reviewed included £0 for either the costs or benefits: this may have been justifiable in some cases, but approximately one fifth of the IAs provided no justification for the assessment. The NAO assessment did not focus on the incorporation or assessment of wider environmental and social factors.

The NAO (2012) subsequently prepared a report for the Environmental Audit Committee (EAC)¹⁸ giving an overview of the options appraisal processes across the government's decision-making landscape, with a focus on the incorporation of environmental and social factors. The report emphasised that “the Green Book and associated guidance for impact assessments and business cases aspire to all costs and benefits being monetised to inform choices between options” but recognised that some impacts cannot be reliably monetised and that departments might consider alternative structured approaches to option appraisal. It also highlighted various methodological challenges in bringing sustainable development issues including modelling uncertainties, long term impacts, risk and uncertainty.

- The structured presentation of costs and benefits on a comparable basis and in monetary terms helps decision-making and the management of budgets across programmes.
- There are difficulties identifying and quantifying the full range of impacts, limits in the extent to which such impacts can be monetised, and challenges in assessing impacts which cannot be monetised. There is the requirement for a structured consideration of qualitative factors and improvements to the associated practical guidance.
- Valuing non-financial costs and benefits can be difficult. There is scope to improve levels of monetisation by promoting its use and promulgating good practice, for example, by extending libraries of techniques and cross-departmental contacts.
- Where it is difficult to quantify all costs and benefits associated with different options, appraisals may focus only on the differences between options and not attempt to quantify those impacts which are likely to remain the same. This may be a proportionate approach when impacts not assessed apply equally to all options, including the "do nothing" option. But it risks failing to understand the absolute scale of impacts.
- In some cases, the use of cost benefit analysis can involve complex modelling to assess the likely long-term impacts of different policy options. It may not be possible to model indirect impacts, and the results may be subject to considerable uncertainty.

¹⁸ National Audit Office (2012) *Appraisal and sustainable development*. Briefing for the House of Commons Environmental Audit Select Committee. July 2012.

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- It is inherently challenging to develop methodologies that identify the value individuals place on wider environmental and social impacts and that allow consideration of impacts that may go beyond marginal change.
- Current valuation approaches can only assess the impact of marginal changes in impacts rather than step changes or cumulative impacts, and to that extent they may understate the scale of potential impacts. For example, in land-use planning the impact of many individual developments may result at some point in a further development having a major adverse impact on biodiversity.
- Preference-based approaches for monetising non-financial impacts are methodologically complex for environmental changes (which often have very long-term impacts) and indirect impacts (which are often complex to understand). Preference values expressed will be greatly affected by the method of their collection, including sampling and the valuation instrument itself. For example: different societies and different subsets of a society may value impacts very differently; preferences may reflect short-term priorities rather than being informed by a full understanding of the nature of future impacts; and preferences may be influenced by external events.

Work package 8 of the forthcoming UK National Ecosystem Assessment Follow-on (UKNEAFO) considers 'Barriers and Enablers to Embedding an Ecosystems Framework in Appraisal'. This considers the ecosystem services framework in appraisals within central government but also arms-length bodies, consultancies and non-governmental organisations. The conclusions are structured in terms of micro ('behaviour'), meso ('institutional culture') and macro ('social and political context') scale. This will provide further evidence, alongside this study, for Defra to consider when looking to integrate ecosystem services in policy development and appraisal in the future.

2. Research questions and method

2.1 Research questions

2.1.1 First stage desk study and extension: overview of appraisal of sustainable development issues

The headline question for the first stage of research was “Broadly assess how sustainable development issues are incorporated within published Impact Assessments (IAs) produced since August 2011”. Under this heading, two main questions and a number of sub-questions are identified:

- What proportion of IAs are working through Step 4 of the IA toolkit (“Identify the impacts”) considering the three pillars of sustainable development: economic, social and environmental?
 - Are the impacts assessed in a qualitative or quantitative way, and which impacts could be considered significant?
 - What guidance is being used by appraisers to assess the different pillars of sustainability?
 - Are impacts stated separately or is there an attempt to integrate different kinds of impacts using multi-criteria analysis or similar approaches?
 - Are there exemplar case studies?
- What proportion of IAs assessed covered proposals in which a sustainable development perspective would have been appropriate?

These questions were addressed initially for IAs published since the introduction of revised guidance - the IA Toolkit - in August 2011. Subsequently, a project extension extended the coverage back to 2008. The earlier IAs could not work explicitly through step 4 of the 2011 toolkit, but the sub-questions still apply.

2.1.2 Second stage desk study: deeper assessment of environmental appraisal

The second stage of desk research addressed the requirement to “Make an in-depth assessment of the extent to which Departments have used environmental appraisal guidance in Impact Assessments and (where possible) Business Cases over the last 2-3 years.” In the event, Business Cases did prove very difficult to source from most departments (they can contain commercially sensitive elements and are often unpublished) and with Defra’s agreement we focused on Impact Assessments. Questions listed under this heading were:

- Are wider environmental/ecosystem service impacts being assessed and valued where it would be appropriate to do so in policy appraisals and with the appropriate level of effort to the significance of impacts?

- Which particular wider environmental/ecosystem service impacts are accounted for and where are there apparent gaps?
- What is the balance between qualitative and quantitative / monetary assessment?
- What is the direction of travel in terms of accounting for environmental impacts?
- Has specific guidance on valuing carbon or air quality impacts helped or hindered the assessment of wider natural environment impacts?

These questions were addressed partly via the desk study, and also through the interview part of the research.

2.1.3 Third stage of research: Interviews with government officers

The interview stage sought to deepen the analysis of the desk study and in particular to address two further requirements: to “Evaluate the effectiveness of environmental appraisal and (where appropriate) broader sustainability guidance” and to “Assess how the application of environmental appraisal and sustainability guidance makes a difference in policy terms”. Questions listed under these topics include

- What is departments’ awareness of the new Supplementary Green Book Guidance on accounting for environmental impacts and related Defra guidance?
- Is guidance pitched in the right way and easy to use? How could it be improved? Assuming that a good “supply” of tools and guidance on valuation exists, how can we increase the “demand” for valuation? How aware are Departments of key sources of valuation such as the UK National Ecosystem Assessment and the Environmental Valuation Reference Inventory (EVRI)?
- Has the emphasis on taking an ecosystems approach increased demand for monetary valuation of environmental impacts?
- What are the policy-relevant gaps in environmental valuation evidence perceived by Defra and other departments?
- Is there evidence of its application making a difference to option choice, ranking or design? Are there less direct benefits e.g. showing that the favoured option is not necessarily an environmentally detrimental option? What evidence is there of such guidance used at the early stages of policymaking cycle e.g. high level policy statements?
- Has the guidance prompted new insights that would not have been anticipated in its absence, including identifying potential for synergies across departmental policy areas?
- How can we assess the value to society of decisions that have been affected by the guidance?

2.1.4 Final stage: conclusions

The final stage of research involved drawing together all the previous work to “make recommendations for the short and medium term to assist future mainstreaming of sustainability approaches and accounting for environmental impacts”. Particular questions here were:

- How might guidance be improved to increase practical uptake in a proportionate way?
- Where are the best opportunities for Defra mainstreaming efforts in environmental valuation?
- What support or other incentives do other Departments need (including from Defra)?
- What lessons can be learned from application of other forms of appraisal guidance?
- How might uptake of environmental and sustainability appraisal guidance be credibly monitored by Defra on an on-going basis?

2.2 Method and reporting

Details of the methods applied are presented in Annex 1. Below we give brief details of the development of samples for the desk studies

2.2.1 First stage and project extension: overview of sustainability appraisal

Initial searching on the Department for Business, Innovation and Skills (BIS) IA library produced a list of 295 IAs published since August 2011. After consultation with Defra, it was identified that some departments were under-represented, and a second list of IAs sent to the RPC for approval¹⁹ gave 371 IAs. There was substantial overlap, but nevertheless several IAs on the first list were not on the second - any IAs for policy which is not regulation and/or which does not apply to business or civil society²⁰ do not have to be sent to the RPC. We cannot be confident, therefore, that every relevant IA has been detected, but the total number of IAs identified at this stage was over 450 giving a large sample. Several duplicates were identified (notably cases where the library included separate entries for the IA with and without RPC opinion) as

¹⁹ <http://regulatorypolicycommittee.independent.gov.uk/wp-content/uploads/2012/12/RPC-Report-November-2012-Final.pdf>

²⁰ From here on, when we refer to ‘business’ this should be taken to include civil society.

well as a number of broken links, most of which we have been able to locate from other sources.

Further searching for the project extension was carried out using the new database on <http://www.legislation.gov.uk/>. This produced similar numbers of IAs: between 321 and 353 for each of the years from 2008-11.²¹

In both original and extension work, we examined each IA briefly to distinguish those that merit closer examination due to their nature from those that are outside the current scope of interest. Interpreted broadly enough, “sustainable development” could be deemed to cover just about any policy, and clearly all policymakers and analysts should consider whether their proposals have social, environmental and economic/financial impacts (broadly defined²²), however the interest in this project is in a slightly narrower interpretation relating to balancing the three pillars of sustainable development and accounting for these in policy appraisal.

Therefore, we restricted our attention to topics that seem likely to have strong potential impacts across two or more SD pillars. Topics therefore deemed outside the current scope of interest are listed below: though some of these clearly could involve impacts across the SD pillars, we considered that the impacts would be dominated by those under the main pillar and would therefore be less interesting from an overall sustainability perspective. Topics deemed out of scope included:

- various criminal issues: domestic violence, forced marriage, sex offenders, firearm controls;
- issues relating to immigration policy, rules about removing people refused right to remain, etc.;
- issues relating to privacy and civil liberties;
- purely medical/care issues;
- legislation on (circus) animal welfare;
- issues impacting only on transfer payments / transactions costs, changes in application fees, etc.;
- minor/trivial modifications to existing legislation e.g. removal of redundant statutory instruments;
- legislation on pensions, equal pay etc.; and

²¹ The numbers of IAs on the legislation.gov website are slightly lower; this is due to the sample being collected when the website was in a transition phase i.e. IAs were being transferred from the IA library to legislation.gov.

²² “Economic impacts” here refers to the whole spectrum of public value, not limited to commercial or market impacts.

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- legislation on siting of tobacco vending machines, standardisation of tobacco packaging, anti-smoking signage in workplaces.

Applying these restrictions, we selected those IAs that were most likely to call for analysis across the sustainable development pillars. The final database includes 249 IAs, of which 125 were published after August 2011 until December 2012 and 124 before that date (Figure 1).

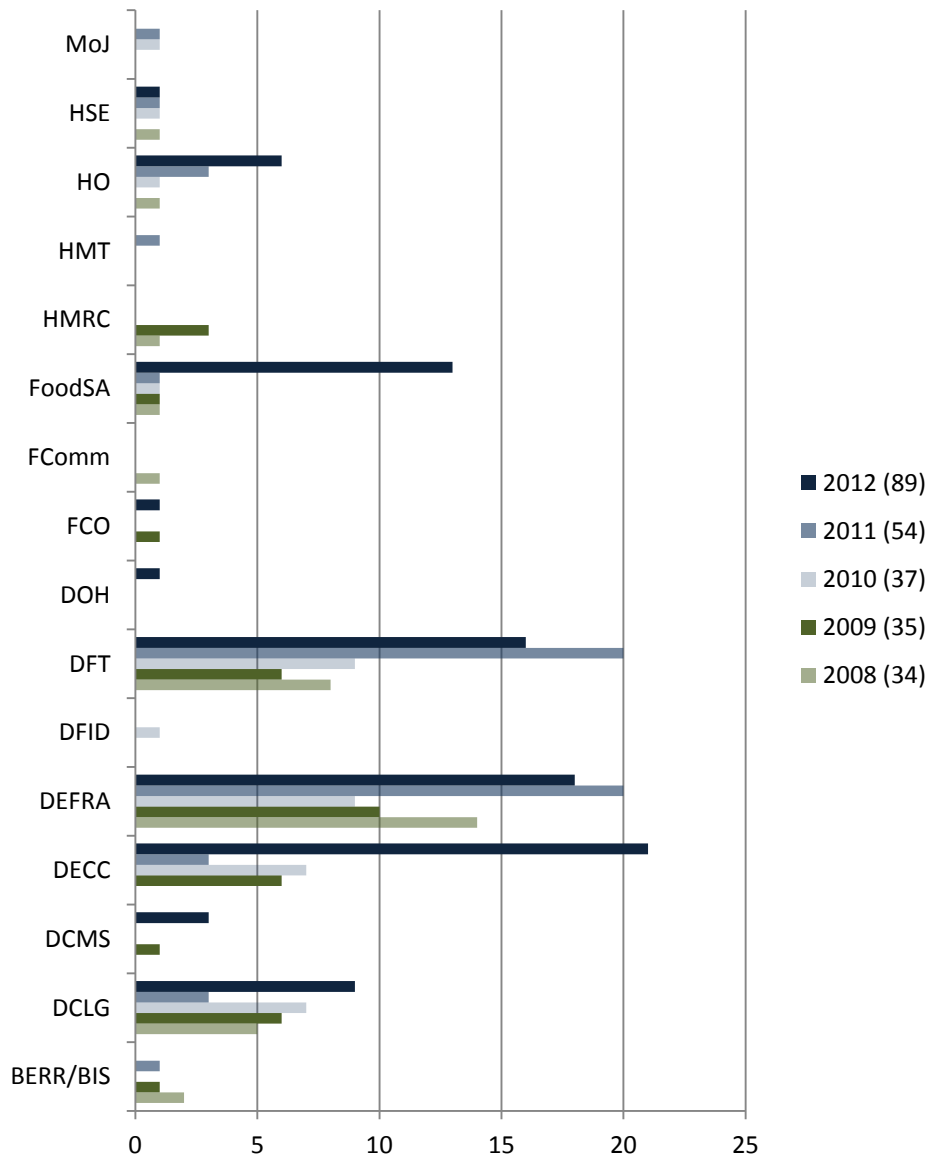


Figure 1: Number of IAs assessed, by department and year.

2.2.2 Second stage: deeper analysis of environmental appraisal

For the more detailed analysis of the treatment of environmental impacts, a smaller sample was developed, initially based on the IAs from the first round of analysis (post-August 2011) that were interesting from an environmental perspective, supplemented by earlier IAs drawn from a review of published IAs since 2008. Some of the IAs turned out to be less ‘environmental’ than expected; this led to the addition of further IAs that did cover more significant environmental impacts, identified during the ‘extension’ stage of the basic study. In total 43 IAs were examined in depth (Figure 2).

A number of the selected IAs were originally intended to be paired comparisons: IAs with similar topics completed early and late in the period under study, which could be discussed during the interview stage to assess any changes in how appraisal teams had tackled the issues. This approach was not successful however, due to the lack of ‘institutional memory’ regarding IAs completed some time ago - people had moved on, or could not recall details several years later, and it was not possible to discuss how specific older IAs had been addressed.

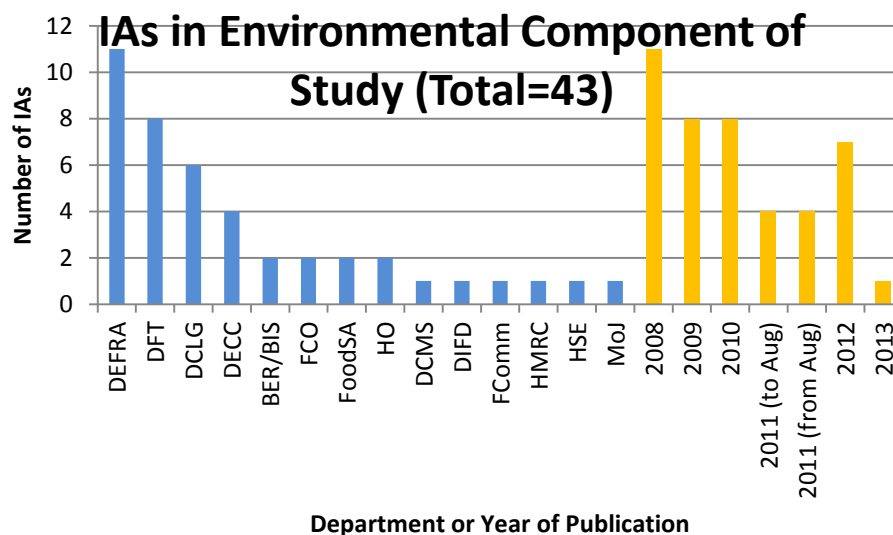


Figure 2: IAs assessed in environmental component of the research, by department and by year.

3. Results of first stage desk study

3.1 Overall assessment of sustainable development appraisal in IAs

Our overall assessment from the first stage of the work is that slightly over half (58%) of IAs are striking an appropriate balance, in terms of identifying and addressing appropriately all the impacts, or identifying and addressing appropriately all the significant impacts (i.e. ignoring some potential impacts, but only those that are trivial in the context of a proportionate assessment of the proposed policy). About a quarter (24%) are identifying all the impacts but could improve rigour of analysis, and about a fifth (19%) are missing some SD impacts that ought to have been considered (Figure 3).

Proportion of IAs with different scores

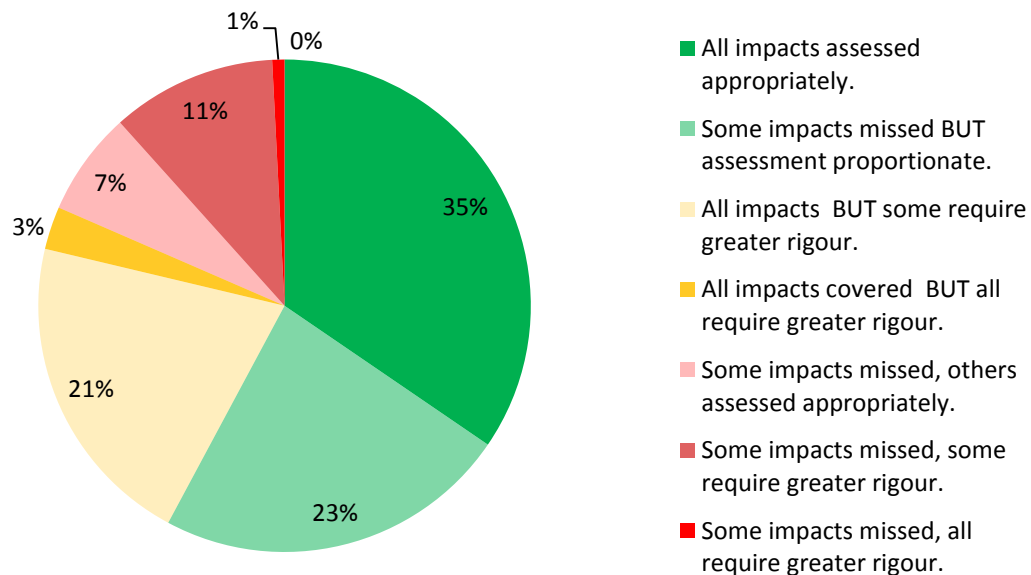


Figure 3: Overall assessment: proportions of IAs given various overall scores.

This suggests that there is room for improvement; however it should be noted that our analysis is based on fairly rapid assessment during a desk study, and depends entirely on the information written in the IA. Some instances where we have identified low rigour or missing impacts could be a result of misinterpretation or could relate to aspects that appraisers have considered but then not deemed necessary to report in the final IA. More detailed assessment of the IA procedures and the use of guidance is followed up through the deeper case study and interview stages of our research.

3.2 What proportion of IAs assessed covered proposals in which a sustainable development perspective would have been clearly appropriate²³?

The first point to note here is that our sample was developed by selecting the most relevant IAs where there were likely to be important impacts across two or more of the SD pillars from a sustainable development perspective. From our initial sample of over 400, we reached a sample of 150 (with subsequent removal of some duplicates). On this basis, therefore, we estimate that between 30% and 40% of all IAs have a high impact in terms of sustainable development but this proportion varies by department.²⁴

Of the IAs we assessed, most (80%) had impacts on at least two of the SD pillars (Figure 4, “any impact”, first two columns). Two thirds have medium to high impacts on at least two pillars (Figure 4, “medium or high impact”, first two columns), and a third have high impacts on at least two pillars, (Figure 4, “high impact”, first two columns). A third have medium or high impacts on all three SD pillar-impacts (Figure 4, “medium or high impact”, first column).

²³ This is to establish a manageable sample - all policy/regulatory proposals should consider whether there are social, environmental and economic impacts. However, some proposals will more clearly contain a range of impacts under the three pillars and it is these impact assessments that form the sample to be scrutinised in more detail.

²⁴ These figures cover only the initial sample (August 2011-December 2012). The sample taken from the earlier period did not attempt to cover all the IAs for which a SD perspective would have been clearly appropriate.

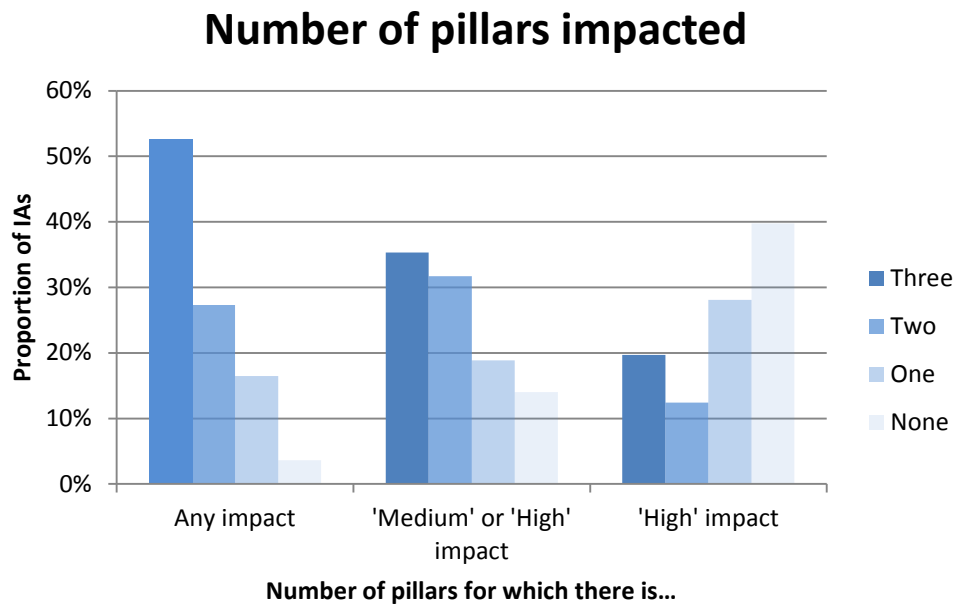


Figure 4: Proportions of IAs with three, two, one or no SD pillars having impacts of different significance.

3.3 Which impacts could be considered significant?

The majority (78%) of IAs are for policies that have high or medium significance in economic impacts. Corresponding figures for social (60%) and environmental (50%) impacts are rather lower.

Significance of impacts

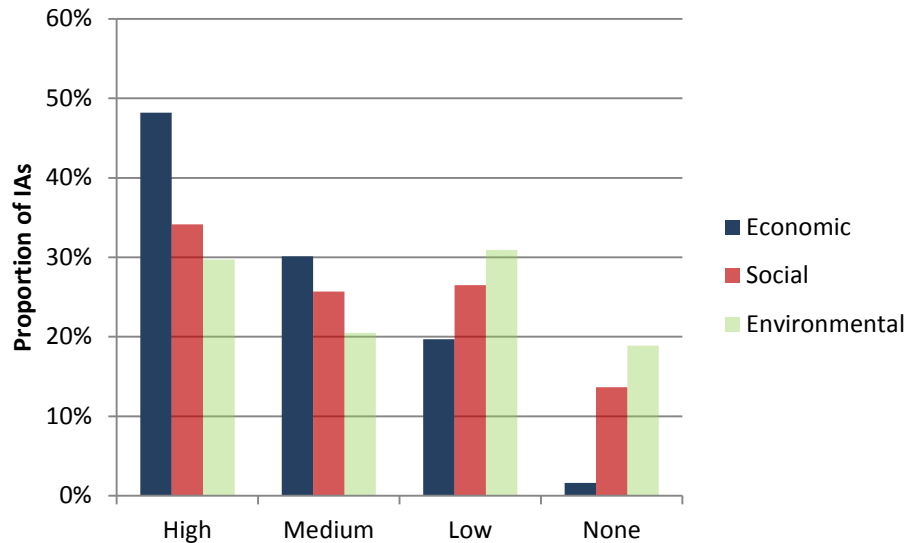


Figure 5: Researcher assessment of the significance of impacts under each pillar in the IAs assessed.

3.4 Identification of impacts and rigour of analysis

For IAs after August 2011, it is hard to determine what proportion work *explicitly* through Step 4 of the toolkit: only nine of the IAs we assessed explicitly reference the toolkit (Box 2 gives an example). And before that, IAs could not use the toolkit because it was not published. However, most of the IAs considered do report SITs, and most do make an effort to address sustainable development impacts. Factors we can determine clearly in a desk study are the actual impacts identified and level of appraisal rigour applied, and then (by comparing this to our assessment of the impacts that should be identified and how important they are) work out whether the evidence presented in an IA is sufficient to address each pillar.

The IA for 'M25 Junctions 2 to 3 Variable Speed Limits and Enforcement' (2010)

This IA identifies that the M25 between Junctions 2 to 3 suffers from congestion, a high accident rate and high carbon emission levels. The IA concludes that this stretch of motorway would benefit from a variable mandatory speed limit. There is good clarity in the information and assessment throughout the IA, which includes useful visual aids. The IA references previous consultation with affected stakeholder groups and interested parties and identifies where the summary document can be found. Other information sources that informed the IA are also comprehensively acknowledged and referenced.

It is noted that the IA had the benefit of data made available from a similar completed scheme on the M25 which informed the assessment (the assumption that the impacts would be similar in nature is highlighted appropriately). The summary of previous studies is concise but still includes sufficient information to suggest a relatively high level of rigour (for example noting that a study team, which included recognised experts in traffic behaviour, air quality, noise pollution, accident analysis, statistics and economic appraisal, was accountable to a specially created Steering Group).

The IA includes a description of who will be affected by the proposals, a description of the impacts and impact magnitudes. The anticipated effects of the scheme in the future were estimated by applying traffic flow growth to the current measured traffic flow profile. Benefits (reduced road accidents, reduced carbon emissions and reduced journey times) were quantified and monetised (WebTAG guidance was used). Sensitivity analysis of the impacts was carried out, with a medium traffic growth rate used to provide the NPV Best Estimate, and low and high traffic flow growth rates used to provide the Net Benefit Range. Other related issues were identified but scoped out of the cost benefit analysis as they were not considered significant (noise, fuel consumption and driver compliance with speed limits).

Most importantly, with respect to the focus of this research, the IA explicitly worked through Step 4 of the IA toolkit, with the relevant lead questions from Step 4 listed and answered. These are integrated into the SITs Appendix template that was in use at the time the IA was produced.

<http://www.legislation.gov.uk/ukia/2010/354>

Box 2: Example of IA explicitly referencing Step 4 of the toolkit.

Figure 6 shows the extent to which impacts were identified in the IAs. The first three columns sum to 100% for each pillar - each IA was assessed as having identified all relevant impact, or some, or none. The 'False Negatives' are the small proportion of IAs that did not identify impacts, but should have done (according to our assessment: these IAs appear in both 'None' and 'False Negative' columns), while the 'False

Positives' are the small proportion of IAs that did identify impacts where these should be considered trivial or non-existent (these appear under 'Some' as well as 'False Positive'). There were few such false positives, and where they did arise it seemed to be due to a 'box-ticking' approach to SITs. This is not a major source of concern: false positives imply some waste of appraisal resources, but do not in themselves represent any risk of implementing policies without considering all their possible effects.

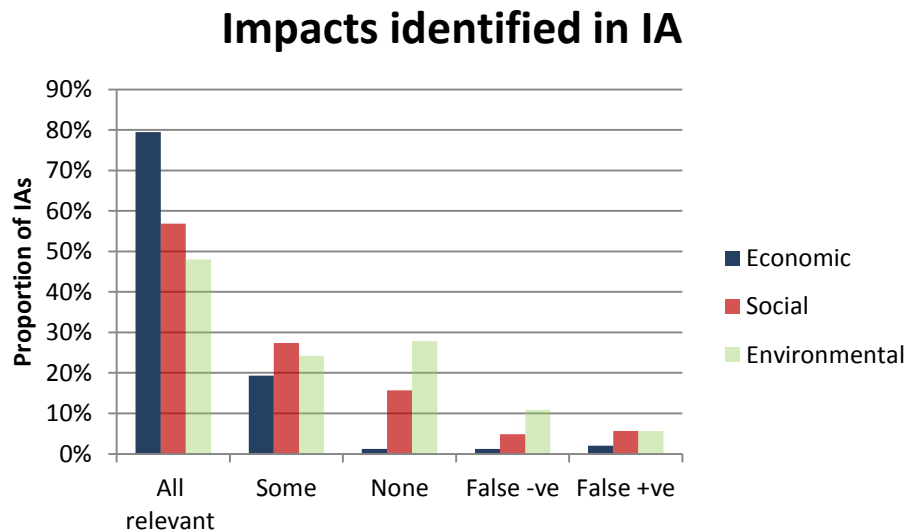


Figure 6: Proportion of IAs identifying all, some or no relevant impacts, and false negatives / false positives within these categories.

Overall, 20% of IAs missed some economic impacts, in our judgement: 19% that identified some of the economic impacts, but missed others, and 1% that identified none, but should have. Similarly, 32% are missing some social impacts (27% with some and 5% false negatives), and 35% miss some environmental impacts (24% with some and 11% false negatives). Again it should be stressed that this hangs on our assessment of the policy proposals and information presented.

The IA '*Food Hygiene (England) (Amendment) Regulations 2012 - use of clean water on fishery products*' is an example where we felt that there were some impacts that were missed, but that the analysis was proportionate.

The level of appraisal of impacts in this IA was low but ultimately deemed to be proportionate. The failure to identify some impacts may be related to an issue around the baseline where a business as usual option was set out instead of a 'do nothing' option. It was felt that under a 'do nothing' scenario there would be health impacts associated with the falling of transitional measures. Some increases in consumer protection were identified under Option 2 but these were assumed to be associated with the introduced control procedures not the falling of transitional measures. The main benefit is around cost savings to business from not having to use potable water, which is identified but no quantification is given.

The IA is deemed to be proportionately analysed despite the issues around impact identification, because the arguments made are valid, and further analysis would not alter the outcome.

<http://www.food.gov.uk/enforcement/regulation/betregs/ria/ria2012/cleanfish>

Box 3: Example of classifying IA: Some impacts missed, but this is proportionate.

In many cases, it can be deemed proportionate to omit some possible impacts (see Box 3), so the figures for IAs that miss important impacts are lower - as noted above, 19% of IAs miss one or more impacts that should have been considered in a proportionate assessment. Nevertheless it would be preferable for clarity and audit purposes to include simple information about impacts that are possible and have been considered, but deemed not proportionate to assess in detail.

A similar caveat applies when we consider appraisal rigour (Figure 7): where significance of impacts is low, it may be proportionate to limit effort expended on their analysis, so 'low' or 'medium' rigour can be the right (proportionate) approach. Keeping this in mind, the Figure shows the level of rigour applied to appraisals under each pillar. We ignore cases where there is no impact, so the rigour must fall into one of four categories (high, medium, low and false negative), and these columns add to 100% for each pillar. While over 80% of IAs treat economic impacts with medium or high rigour, 52% and 50% of IAs respectively treat social impacts and environmental impacts with low rigour or not at all. The differences between 'economic' (202 high or medium out of 245 IAs with significant impacts) and 'social' (105 of 215) or 'environmental' (99 of 197) are significant at the 1% level. Here, the issue is partly overlooking impacts and partly failure to engage with the potential for quantifying and in some cases monetising impacts where this would be feasible.

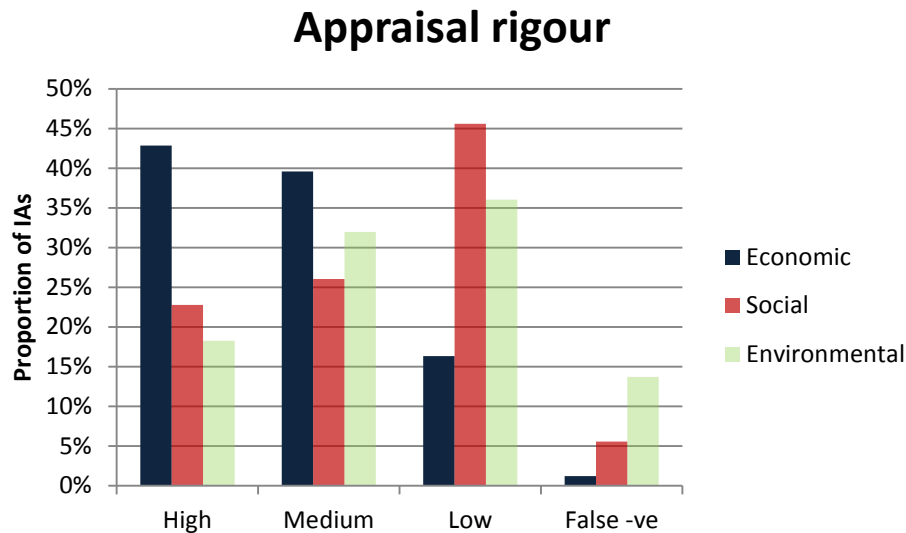


Figure 7: Assessment of appraisal rigour (high, medium or low) in the IAs that identified impacts, plus those that should have identified impacts (false negatives).

However, as noted above, it is not necessarily the case that these appraisals are failing, since in many cases the significance of the impacts may be low (especially environmental and social impacts: see Figure 5 above) so it may be proportionate to limit effort expended on their analysis. In the sample of IAs assessed, the environmental and social impacts tended to have lower significance, and this may partly explain the tendency to lower rigour in analysing these impacts, though comparing the percentages in Figure 5 and Figure 7 suggests that other factors must be at work - in particular, appraisal rigour is lower for social impacts than for environmental, while in terms of impacts identified this situation is reversed.

Our interpretation (supported by anecdotal evidence from the interviews) is that the lower availability and/or familiarity of valuation methods and data for environmental and especially social impacts, and the stronger emphasis placed on economic impacts by the RPC process, are both contributing to disproportionately lower appraisal rigour for the environmental and social impacts.

Small Waste Oil Burners (October 2012)

The IA for Small Waste Oil Burners (October 2012) looks at the impacts of amending the guidance to apply the Waste Incineration Directive (WID) to Small Waste Oil Burners (SWOBs).

The new policy will have an impact on the costs, environmental and health impacts of waste management, on air and water quality, on landscape (through the appearance of water bodies), on the amount or variety of living species and on the amount or variety or quality of ecosystems (both terrestrial and aquatic). Changes in the level of emissions associated with changes in fuel use, and estimates of the monetary value of these changes, are presented using standard government values: DECC carbon values and Interdepartmental Group on Costs and Benefits (IGCB) damage costs for NO_x, SO_x and PM₁₀ (these capture some of the impacts, mainly on health, of exposure to some air pollutants). Results are given in £ per tonne of emissions avoided for the next 15 years. To value the impact of lead, other studies assessing the impact of lead emissions on IQ loss were used. Reduced emissions of heavy metals would be expected to contribute to reductions in surface water contamination thereby reducing acidity and the potential for these substances to bio-accumulate in the food chain and humans. The IA gives estimates of the likely impacts of changes in emissions and associated costs to society.

The cost of replacement heaters for affected premises and cost of energy for affected premises are calculated. The IA argues that amending the guidance is unlikely to lead to an increase in illegal dumping, because “Waste oil has a value as a source of energy and there is a full and widespread collection service for waste oil from garages. There are also legal requirements on the management of waste oil which ensure its proper disposal through safe and environmentally sound disposal methods”.

The social, economic and environmental impacts of the policy have been identified and assessed appropriately. Wider environmental impacts have been identified and where possible quantified. Impacts on air quality and greenhouse gas emissions are valued, and water regulation and aesthetic value are mentioned in the IA. In conclusion, all the relevant social, economic and environmental impacts have been identified and appropriately treated in this IA.

Box 4: Example of classifying IA: Some impacts missed, but this is proportionate.

3.4.1 Changes over time

It is possible to compare the identification of impacts before and after August 2011, though with a caveat: because of the structure of the samples, there are fewer IAs from earlier years, and the samples are not random, but rather represent selections of IAs most likely to cover a range of sustainable development issues.

The comparison (Table 1) appears to show a small increase in the number of false negatives (i.e. failures to identify possible impacts), however this is not a statistically significant change, so we cannot conclude that there is any change in appraisal quality here.

There is a small, but statistically significant, decrease in the number of false positives (i.e. identification of non-existent impacts). The latter finding is consistent with the idea that the change in guidance may have discouraged a ‘box-ticking’ approach to covering issues

	Before August 2011	After August 2011	Significance
IAs with false -ve	13 (10.5%)	21 (16.8%)	Not significant
IAs with false +ve	16 (12.9%)	5 (4.00%)	At 5% level

3.5 Are the impacts assessed in a qualitative or quantitative way?

This stage of the analysis considers all impacts under a given pillar together (more detailed work to consider the treatment of individual environmental impacts separately is discussed below). Here, the general methods used under each pillar are assessed (Figure 8). Monetisation is common but by no means ubiquitous for economic impacts; most social impacts and even most environmental impacts are described but not quantified or monetised. Again, this is not necessarily inappropriate, since there is lower availability of reliable valuation methods and data for these impacts, and also because the impacts are less significant on average (see Figure 5).

Baseline Evaluation of Environmental Appraisal and Sustainable Development Guidance Across Government

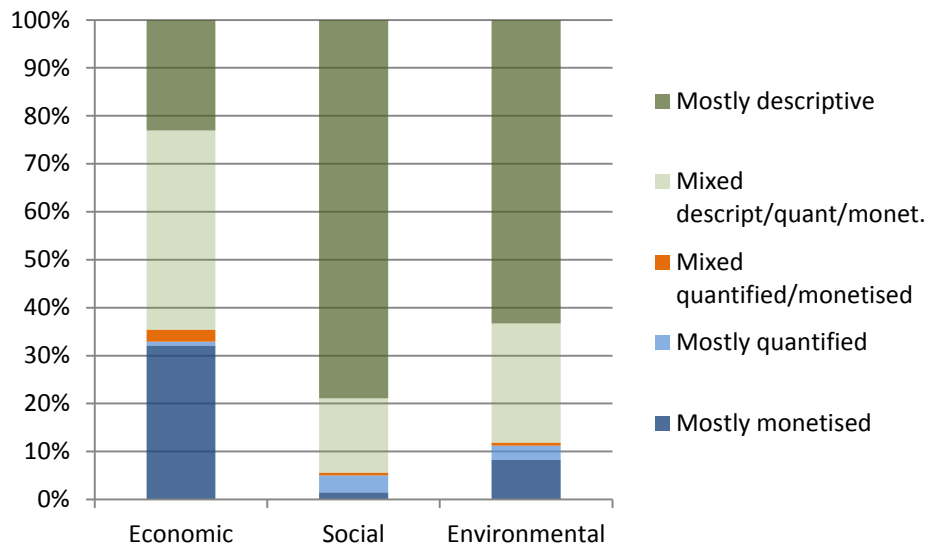


Figure 8: Ways in which impacts are assessed, in IAs which did identify some impacts, under each of the three pillars.

3.6 What guidance is being used by appraisers to assess the different pillars of sustainability?

This has proven very difficult to establish simply by reviewing the IAs in a desk study. Generally, the guidelines used are not explicitly referenced in the IA. And, since there are different sets of guidance that provide essentially the same message, even where it is clear that these messages have been taken on board in the production of the IA, it is not possible to determine precisely what guidance has been used. Only 9 IAs in our post-August-2011 sample explicitly referred to the IA toolkit, though it is likely several others made use of it; reference to WebTAG²⁵ was made in several DfT appraisals. Many IAs report several SITs, but it is not usually clear what guidance was used to underpin this.

²⁵ <http://www.dft.gov.uk/webtag/index.php> : “This is the Department for Transport’s website for guidance on the conduct of transport studies.”

3.7 Are impacts stated separately or is there an attempt to integrate different kinds of impacts using multi-criteria analysis or similar approaches?

Most of the IAs apply partial cost-benefit analyses and report net present values; but many impacts, especially social and environmental, tend not to be included in monetary terms. Our sample included only four IAs taking a purely descriptive/qualitative approach, and just one that combined CBA with multi-criteria decision analysis²⁶.

3.8 What kind of IAs are scoring highest?

As explained in Annex 1, for the purposes of analysis comparing performance across different groups of IAs, we used an arbitrary but internally consistent scoring system as described below. This is a simple combination of our assessments of (1) the identification of impacts (all, some or none of likely impacts identified) and (2) the rigour of assessment, taking account of proportionality. These are subjective judgements that have been applied consistently across all the analysis.

The attribution of different numbers of ‘points’ to each possible combination creates an arbitrary scale that aims to reflect how ‘good’ an IA is overall, with maximum points for identifying all impacts and assessing them appropriately, to minimum points for an IA that misses all SD impacts (we saw no IAs in this category).

- All SD impacts identified and assessed appropriately (6 points)
- Some SD impacts missed BUT assessment is proportionate to costs/benefits (5 points)
- All SD impacts identified BUT some require greater appraisal rigour (4 points)
- All SD impacts identified BUT all require greater appraisal rigour (3 points)
- Some SD impacts missed (that a proportionate assessment would include) (3 points)
- Some SD impacts missed, some identified require greater appraisal rigour (2 points)

²⁶ Multi Criteria Decision Analysis refers to a range of techniques for structuring and ‘solving’ decision and planning problems involving impacts on multiple criteria that cannot all be expressed in the same metric.

Baseline Evaluation of Environmental Appraisal and Sustainable Development Guidance Across Government

- Some SD impacts missed, all identified require greater appraisal rigour (1 point)
- All SD impacts missed (0 points)

It is interesting to ask if there is any systematic influence behind the IAs achieving the higher (or lower) scores. Possible influences (that we can test for) include the department carrying out the IA, the time period, and the kinds of impacts covered by the IA.

No change in quality over the period

There is no evidence for any systematic change in appraisal quality or treatment of sustainable development issues over the time period assessed. Figure 9 shows the mean scores, with one standard deviation above/below the mean, for the whole sample, split by 6 month periods for 2008-2010, January-July and August-December for 2011 (corresponding to publication of the supplementary guidance in August 2011), and by quarter for 2012 (because the samples are larger). The apparent differences are not statistically significant. In particular, there is no clear change in quality observable as a result of the change in guidance: 62% of IAs before August 2011 score 5 or 6, compared to 54% after, a difference that is not significant at the 10% level.

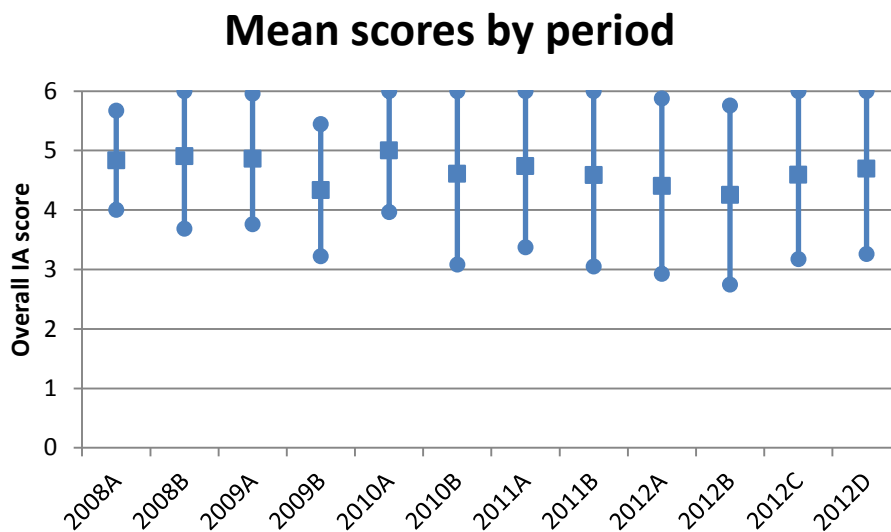


Figure 9: Mean IA score, +/- one standard deviation, for successive periods. (scoring system as explained above)

No impact of Department on appraisal quality

There is no evidence for any systematic difference in the quality of sustainable development appraisal across departments (Figure 10), and no significant differences across in scores across those departments for which we have tested large samples of IAs.

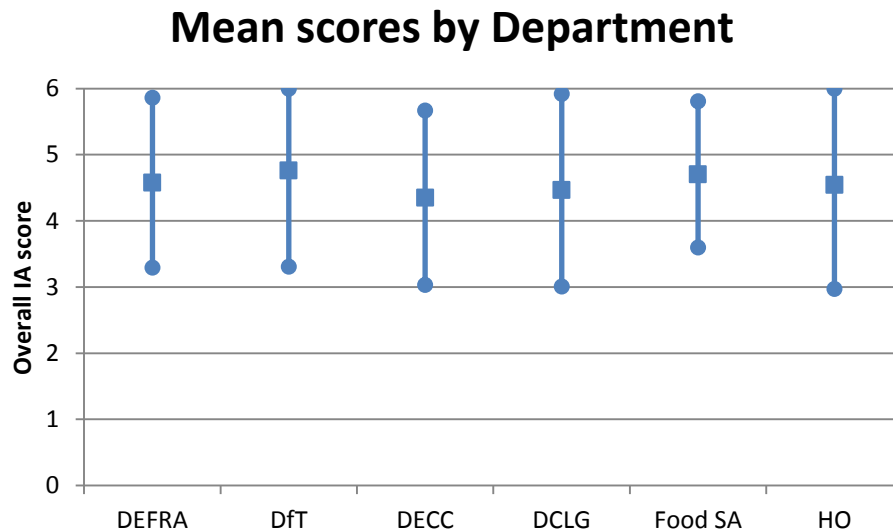


Figure 10: Mean IA score, +/- one standard deviation, for departments with 8 or more IAs in our sample (scoring system as explained above).

Impact of appraisal ‘size’ on appraisal quality

The IA assessments were sorted in order of the Net Present Value, in numerical order and also in absolute terms (i.e. ignoring negative signs). Neither sorting showed any evidence of a relationship between the ‘significance’ in NPV terms and the quality score attributed to the IA.

Impact of complexity on appraisal quality

The average number of IAs across the whole sample scoring 5 or 6 is 58%; but only 45% of IAs with 3 significant pillar impacts score in this range. This difference, though small, is significant at the 5% level. This could be interpreted as reflecting a tendency towards lower scores for more ‘complex’ IAs with impacts across a wider range of factors. However, it should be noted that almost all the IAs have significant impacts on the economic pillar, so what these figures are really showing is that dealing with social and/or environmental impacts tends to result in lower scores, with a higher proportion classified as calling for greater appraisal rigour. This can be related back to the findings on appraisal rigour (Figure 7) and the relatively high proportions of IAs

treating environmental and/or social impacts with low rigour, or failing to identify the impacts.

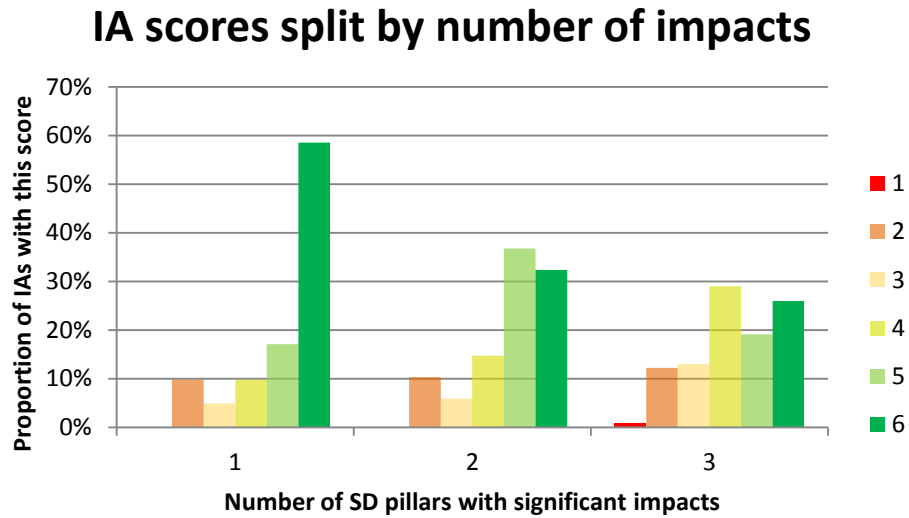


Figure 11: Distribution of scores (as explained above: strongest=6) for IAs with 1, 2 or 3 sustainable development pillars significantly impacted.

4. Assessment of environmental appraisal

The more detailed analysis of environmental appraisal covered 43 IAs, considered to be ‘interesting’ from an environmental perspective, although in the event some turned out to have less environmental content than anticipated. Figure 12 shows the numbers of impacts considered “significant” (of the maximum 7 wider impacts²⁷ and maximum 23 ecosystem service impacts - see details in Annex 1). Some IAs had no significant impacts (left hand of the figure), rising to several with 6 ‘wider environmental impacts; the maximum number of ecosystem service impacts recorded was 14. Figure 13 shows the breakdown of the wider impacts identified.

One thing immediately clear from this figure is that there is no direct connection between the “wider impacts” and ecosystem services. Vulnerability to the effects of climate change, noise, and biodiversity impacts do not appear directly in the list of ecosystem services; conversely, services such as recreation and tourism and many of the provisioning services do not appear in the “wider impacts” list. So there is a sense in which these approaches are more complementary than alternatives. The Ecosystem Services framework is a new lens through which to examine environmental impacts, and might in some cases help reveal or focus attention on new impacts, but relying on this framework alone would be a mistake, because some other impacts are better detected and explored through other frameworks. The Supplementary Guidance on Accounting for Environmental Impacts recognises this, for example directing users to guidance on climate change and on air quality as appropriate.

²⁷ The seven impacts on the “wider environmental impacts” checklist include impacts relating to vulnerability to the effects of climate change, waste management, air quality, landscapes, water quality, abstraction and flood risk, biodiversity and noise.

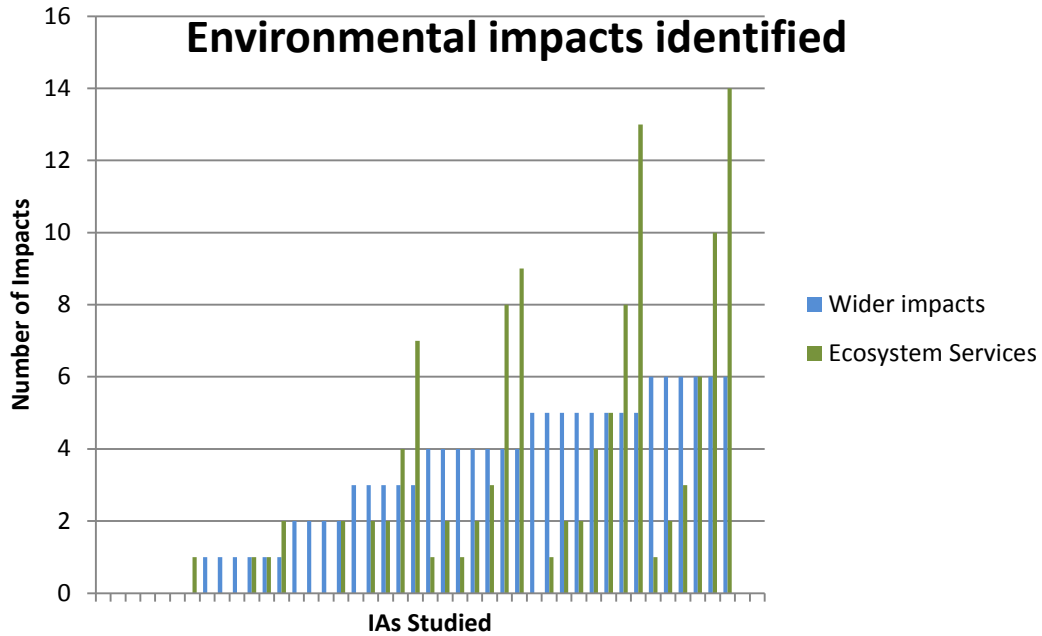


Figure 12: Numbers of "Wider Environmental Impacts" and "Ecosystem Services impacts" identified in the IAs assessed.

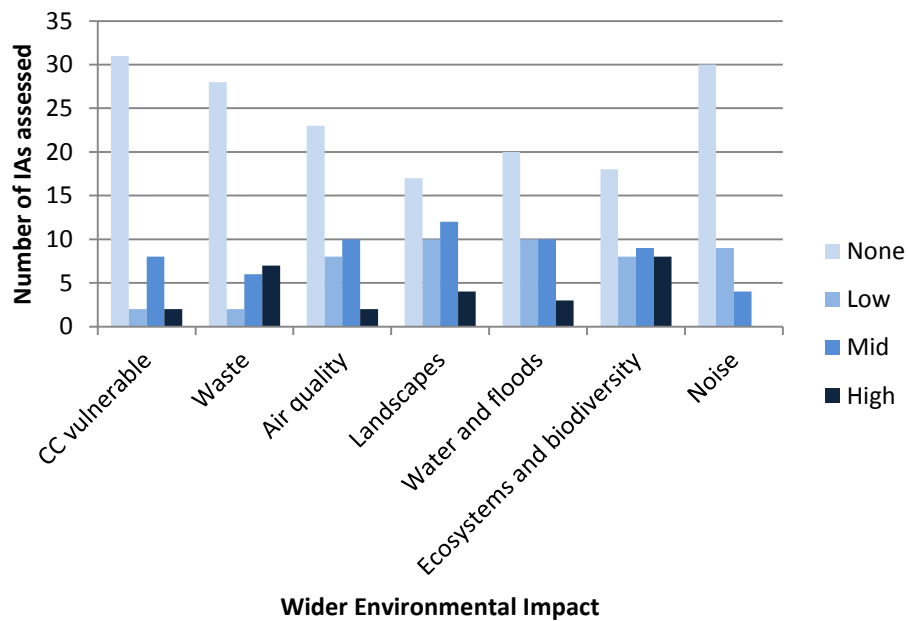


Figure 13: Details of the wider impacts identified in the IAs assessed.

4.1 Assessment of wider environmental impacts and ecosystem services

Questions under this heading included whether wider environmental impacts and ecosystem service impacts were being assessed and valued where it would be appropriate to do so in policy appraisals, and with the appropriate level of effort given the significance of impacts. Which particular wider environmental/ecosystem service impacts are accounted for and where are there apparent gaps? We scored ‘superficial’ effort where the discussion of the impact was cursory with little evidence of effort to quantify, compare with existing situations or values, consider uncertainty and so on. It is proportionate only if the impact is very minor in the context of the overall policy. ‘Partial’ effort goes further in assessing, quantifying if possible, and drawing on wider data sets and experience, and is appropriate for moderate impacts. Significant impacts should be treated with ‘full’ effort, with evidence of serious attention of the options for quantification and valuation, use of the full range of knowledge available, and justification of any decision that impacts can not be quantified. Again, our judgements here are unavoidably subjective, but have been applied consistently across the research.

The overall picture of appraisal effort compared with significance of impact is shown in Figure 14. Note that the largest category - No impact, No appraisal effort - is omitted to make the graph readable: 164 fall into this category, of a total of 301 (43 IAs times 7 possible “wider environmental impacts”); it is of course an ‘appropriate’ outcome, since there is no point expending appraisal effort on an impact that does not exist.

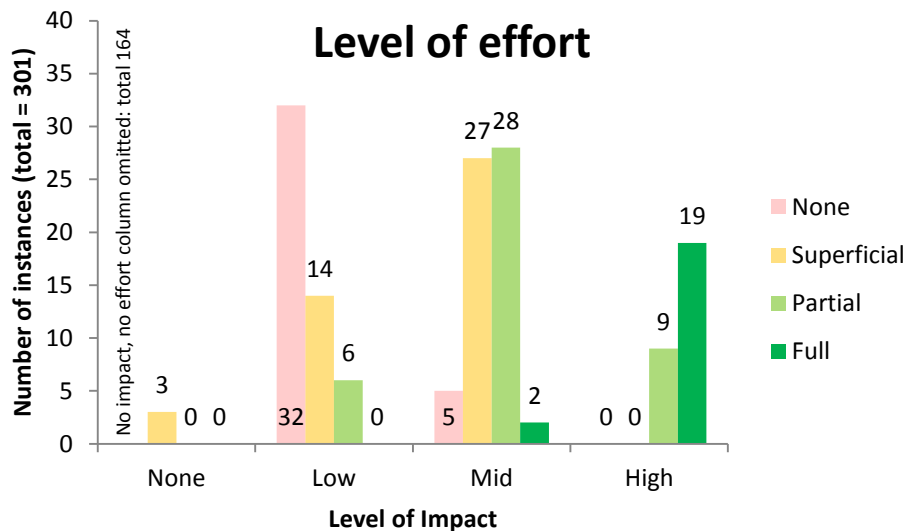


Figure 14: Level of effort expended on each environmental impact, split by the significance of the impacts.

This shows that, by and large, ‘High’ impacts are being treated, ‘Low’ impacts are often ignored, and ‘Mid’ impacts tend to be addressed in superficial or partial fashion. We observed no cases in which wider environmental impacts deemed ‘high’ were given no effort or only superficial effort, providing some comfort that significant environmental impacts are not being overlooked. There were 5 cases of moderate impacts given no appraisal effort, and 3 of these were for impacts on townscape/landscape.

The breakdown in Figure 15 shows all the IAs assessed for the appraisal effort applied to each of the ‘wider environmental impacts’ separately. The “visual impact” is highlighted as a particular problem area, relative to other impacts. The figure shows that overall there are very few false positives (appraisal effort applied to a trivial impact) and, as noted above, very few ‘serious omissions’ (taken to mean a high impact with no or superficial treatment, or a moderate impact with no treatment). There are however rather a lot of ‘omissions’ (taken to mean a low impact that is ignored, a moderate impact that is treated superficially, or a high impact that is treated only in part).

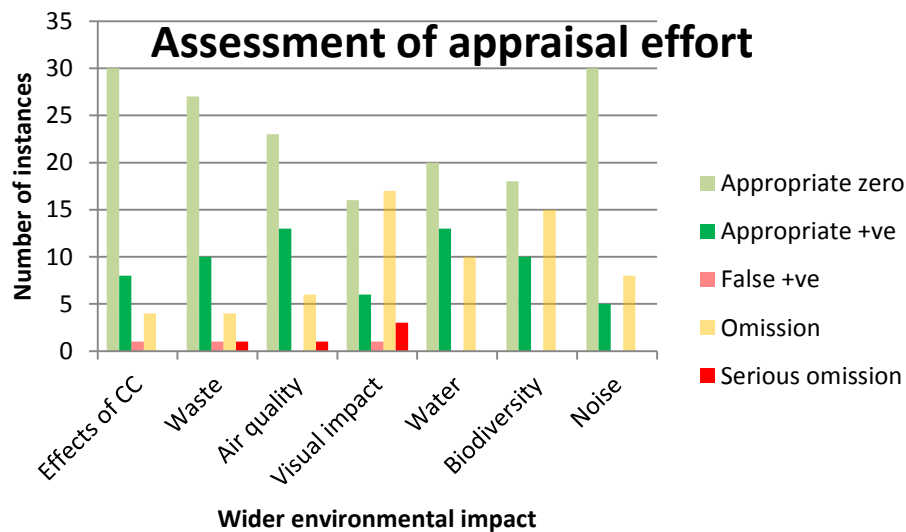


Figure 15: Appropriateness of appraisal effort, split by wider impact.

Turning to the ecosystem service impacts, Figure 16 shows the impacts identified by the researchers, and those identified that are not covered by the original IA. Aesthetic values appear as the most significant omission (backing up the identification above of ‘visual impact’ as a problem area). Another common omission is ‘recreation and tourism’, which is not represented in the wider environmental impacts. Many ecosystem services rarely feature, and this is particularly true of the supporting services.

Ecosystem Service impacts

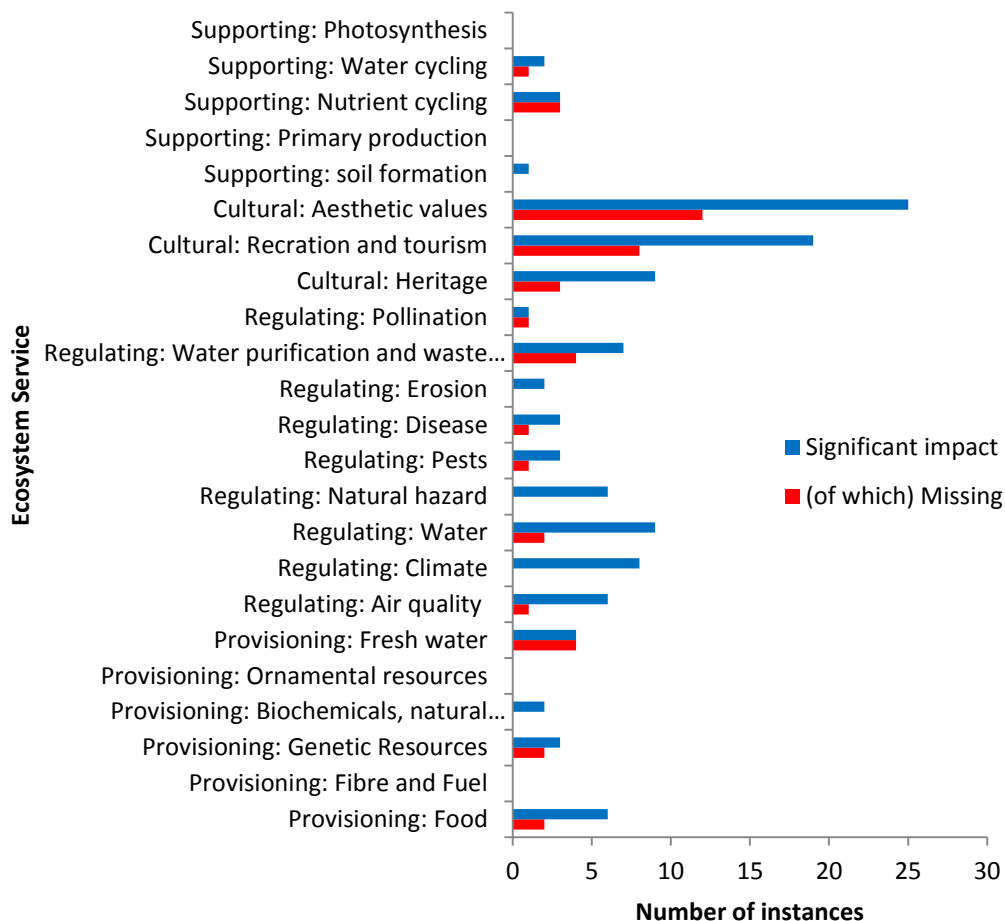


Figure 16: Ecosystem services: significant impacts identified, and 'missing' from assessment.

4.2 What is the balance between qualitative and quantitative / monetary assessment?

The ways in which identified wider environmental impacts are assessed are illustrated in Figure 17. This shows a clear hierarchy in treatment, as expected, with qualitative description more common than quantification, in turn more common than monetisation.

Figure 17 includes only those impacts where assessment was carried out, and in particular excludes the category 'trivial/none' under 'qualitative', which covers instances in which an impact is mentioned, but not discussed. The categorisations are not exclusive (for example, an impact may be assessed qualitatively in full, and also partially assessed in either or both quantitative and monetary terms).

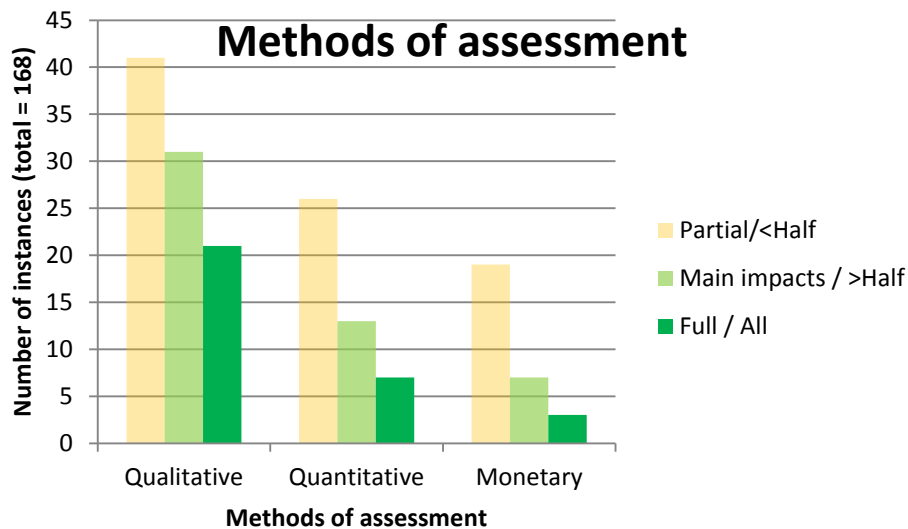


Figure 17: Methods of assessing wider environmental impacts

In the Impact Assessment of the Marine Bill (October 2008), the economic impacts are monetised or quantified; monetised environmental benefits are also given. All the social impacts were identified and appraised appropriately.

Value transfer was used to derive use-value estimates in the IA. A primary valuation study was used to determine a primary monetary estimate of benefits derived from the implementation of the nature conservation measures in the draft Marine Bill, including indicative estimates for non-use values of UK-wide marine conservation. There remain several benefits for which estimates were not possible owing to a lack of data or pertinent studies, such as bioremediation of waste, biologically mediated habitats, resistance and resilience, cultural heritage and identity, bequest values and option values.

The evidence presented relies on a wide range of assumptions, and uses various implementation scenarios in order to construct a reasonable view of the potential costs and benefits of the Bill. The IA does not specify all the parameters necessary to facilitate a detailed cost benefit analysis, but a more detailed cost benefit analysis was to be undertaken prior to implementation, in particular in order to specify in more detail a number of the conservation proposals. This IA is considered as proportionate given the evidence base and the importance of the impacts.

Box 5: Use of valuation evidence to construct the case for policy.

The IA of 'Planning Policy Statement: eco-towns' (July 2009) responds to two major challenges (1) housing shortage; and (2) the threat of climate change. The Planning Policy Statement (PPS)eco-towns is intended to a) support the delivery of additional housing in new settlements, to contribute to the Government's ambition for net housing additions of 240,000 per year by 2016; and b) to deliver highly sustainable developments, which are zero carbon and will act as exemplars for development more widely. The IA had the advantage of existing studies such as a detailed financial viability appraisal in relation to the short-listed eco-town locations as well as a Sustainability Appraisal of both the PPS, and of each of the short-listed eco-town locations.

The IA acknowledges that many of the costs and benefits are likely to vary significantly according to location and specific context and that this is not captured in the high-level of the IA. The IA provides an extensive evidence base informed by the associated studies. The IA considers the broad range of standards as set out in the PPS: Master planning and transition; Zero carbon in eco-towns; Transport; Healthy lifestyles; Space standards; Lifetime Homes Standards; Affordable housing; Code for Sustainable Homes; Real time energy monitoring systems and high speed broadband access; Employment; Local services; Water; Green infrastructure and biodiversity; Landscape and historic environment; Flood risk management and Waste.

Both costs and benefits were quantified and monetised for carbon related impacts. Other environmental and social benefits are not quantified or monetised, however the description of impacts is detailed and comprehensive. This includes, with respect to Green Infrastructure, the identification of a range of related ecosystem services such as flood attenuation, pollution control, and carbon sequestration. Where possible, the evidence base provides a description of the likely nature of the non-monetised benefits and states where and how they are expected to be realised. The consideration of wider impacts and potential related ecosystem services is further acknowledged with respect to the net benefits, which are presented as a range and identified as a likely underestimate because the specified assessment period does not capture the benefits that will continue to flow beyond this period.

Box 6: Example of IA with strong descriptive assessments for impacts.

For ecosystem services, quantification and monetisation remain rare (Figure 18). Although carbon emissions and air pollution are commonly valued, impacts on the ecosystem services of climate or air pollution regulation are less commonly reported. The missing cultural services - those that should have been accounted for, but which were not - are largely aesthetic impacts - this ties in with the observed failures to assess impacts on landscapes/townscapes in the 'wider environmental impacts' - and also recreation/tourism.

The supporting services are rarely accounted for, but can also rarely be determined to be ‘missing’ from the appraisal. These are not end services, but rather intermediate services that ‘support’ the functioning of a natural system and the other (final) ecosystem services it provides. Generally they cannot be directly monetised, and indeed to do so would often result in double-counting, if the final (‘supported’) services are already included. This does depend on the boundaries of the assessment: if for any reason the relevant final services are not considered, the supporting services should be; but this would rarely be the case. None of this implies that supporting services should not be discussed in a transparent fashion, but it would generally be inappropriate (double-counting) to include these as monetary impacts in a cost-benefit analysis. For example, the supporting service ‘photosynthesis’ is essential to ecosystem functioning, but its value is accounted for through its contribution to the provisioning, regulating and cultural services.

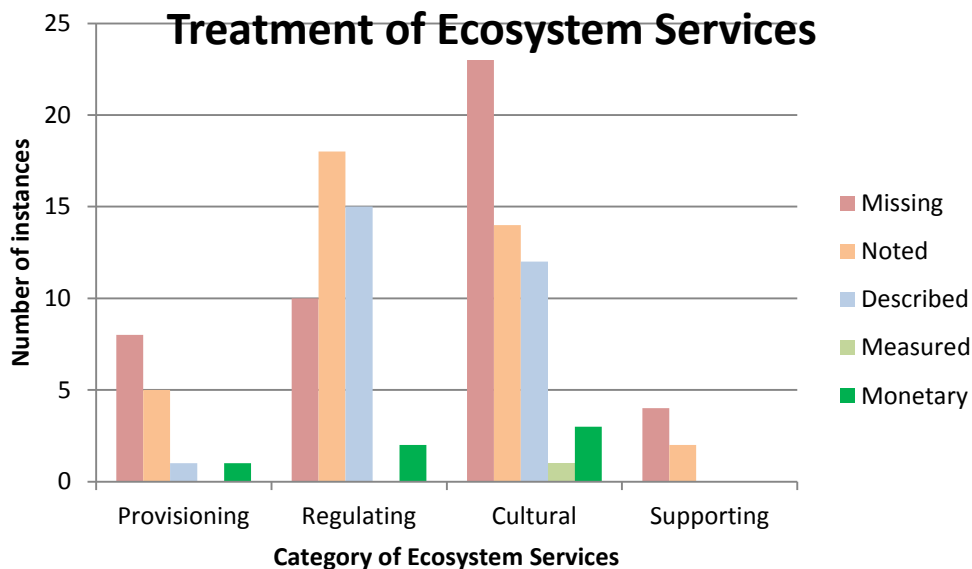


Figure 18: Methods of assessing ecosystem services

4.2.1 Treatment of Uncertainty

Where physical or monetary valuation is carried out, there is generally uncertainty, often substantial, regarding the measurements or valuations. The template for assessing the treatment of wider environmental impacts included columns for the treatment of physical and value uncertainty. Figure 19 illustrates the findings. Where physical or monetary measurements are made, uncertainty is addressed explicitly in over half of cases observed (57%). The impacts for which uncertainty is most covered, both in absolute number of cases and as a proportion, are air quality and waste - these are also the impacts for which monetary valuation is most observed.

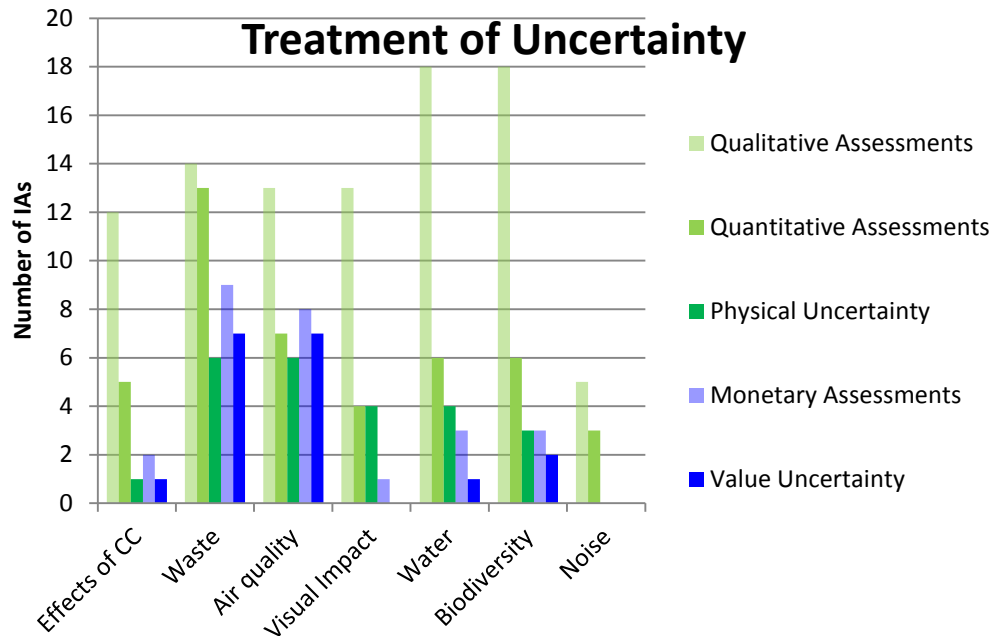


Figure 19: Treatment of uncertainty in the assessment of wider environmental impacts

4.3 What is the direction of travel in terms of accounting for environmental impacts?

Several questions of interest relate to the ways in which changes in appraisal guidance impact on the practice of appraisal. Over the past decade, there has been a lot of work on accounting for environmental impacts in areas of air pollution and carbon, where good emissions data are available and there is a long tradition of valuation efforts. Attention is now turning to more challenging areas, as evidenced by the Supplementary Guidance. Part of the recent changes have been driven by the perceived need to avoid a ‘tick-box’ approach to thinking about environmental impacts, the fear being that the list of separate SITs may lead appraisers to feel the environment can be adequately ‘dealt with’ through a piecemeal approach, considering each SIT independently, whereas the ambition for sustainable development appraisal is ‘joined-up thinking’ not only within each pillar, but also across all three.

Nevertheless, recent changes in guidance do not represent a radical change, but rather aim at gradual improvement. This is part of an on-going trend of increasing environmental appraisal, towards the aim of full consideration of impacts, with appraisers asked to go as far as possible, while taking account of what is proportionate in the context of the policy under consideration. Although many impacts cannot yet

be valued in monetary terms, the first step of full consideration is important and moves the debate on.

The first phase of research found no relationship between publication date and appraisal quality (see page section 3.8), and in the second stage there is again no strong evidence. It should be kept in mind that the sample sizes here are small (in-depth study of 43 IAs, of which 12 were published after the revised guidance) so some apparent differences are not statistically significant. Overall, around half of the impacts are not treated with sufficient rigour, and there is no strong evidence of any change over time. When there is no significant impact, false positives are consistently rare, and again there is no evidence of change over time. For ecosystem services, our data show a significant reduction in the proportion of significant impacts that are completely missed, since the introduction of the guidance; on the other hand, the corresponding increase is in “noting” possible ecosystem service impacts, rather than in any of the more involved levels of appraisal. But these should be considered as ‘hints’ rather than firm findings, because of the small sample sizes.

Overall, the two reviews found no strong evidence of substantial changes in appraisal treatment of environmental issues over the past five years, but it should be kept in mind that the revised toolkit was published only two years ago, and the study examined IAs only to the end of 2012. There are time lags in publication (IAs published in the months after the new guidance will have been started under the old guidance) and in training and awareness. So a fuller appreciation of the impact will be possible by future study of IAs published in 2013-2015, and if larger samples of IAs are considered.

The National Planning Policy Framework (NPPF) aims to contribute to the achievement of sustainable development and to provide a robust framework for making decisions, taking into account important issues such as Green Belt and areas at risk of flooding.

The IA (July 2012) uses the ES framework to help identification of the range of environmental assets that might be impacted by changes in the type and level of development taking place as a result of the Framework. The IA demonstrates well how SD and ES impacts should be considered as set out by relevant HMT guidance documents. ES language is used to introduce the importance of ecosystems services and to plan environment enhancement. Links are made with other government documents such as the Natural Environment White Paper. The impacts of the NPPF are discussed through the ES framework in order to ensure a comprehensive review of costs and benefits, linked with other government policies. Justification is given for the conclusion that the policy is estimated to have a neutral impact. Concerns regarding impacts being missed due to proportionality are addressed (i.e. there may be costs to ES provision but these are not considered to be enough to warrant inclusion in IA). The IA gives a qualitative assessment of ES impacts; concerns about underweighting of unquantified impacts are addressed.

An interviewee stressed that senior officials had requested use of the ES framework because of the nature of the policy as a Department 'flagship' with high stakeholder interest. The framework was considered useful within this context, although it was noted that proportionality is a concern for future use.

There are three main features in this case:

- A request from senior officials was a key driver behind use of the ES framework.
- The ecosystem services framework was deemed necessary partly because the policy was significant and there was a need to clearly communicate with stakeholders.
- Having used the framework the official felt more inclined to do so in the future.

Training and capacity building with a view to embedding the ES framework in the 'toolbox' of officials is important to increasing its use in impact assessments. Demonstrating the value of the framework, enthusiasm at senior levels, and demand from stakeholders are all likely to be important to increasing uptake.

Box 7: Use of Ecosystem Services framework in Impact Assessment.

5. Results of interviews

The candidates for interviews were identified in consultation with Defra. Initial lists were drawn up based on IAs identified as particularly interesting or as part of a pairwise comparison (though as noted above these comparisons did not prove particularly useful in practice). A strategy was developed to ensure a coverage of key departments and various grades, with an emphasis on economists, but also including policy officers. Given the resources available and the requirements of the research, it was decided to focus more on certain departments with heavy involvement in multiple sustainable development issues, though not exclusively; 9 departments were approached, with initial targets of 8 policy officers and 22 economists at various grades.

Further invitations were made following initial rejections, for example where the original invitee had moved on, or considered another person would be more suitable. Where there were gaps, a letter sent to Chief Economists invited them to nominate potential interviewees. A total of 40 individuals were approached. Some potential interviewees declined to be interviewed, some had moved on, and one (at least) had already been interviewed for similar work under the NEA²⁸ and did not want to duplicate effort; others were not available due to holidays. This meant we were not able to complete interviews with all intended groups, notably with the Green Book team in HMT and the RPC Secretariat, though we understand from Defra that both have expressed interest in this research. In the end we completed 16 full interviews (Figure 20), covering seven departments, with three Chief Economist/Deputy Chief Economists, and a range of less senior grades.

²⁸ Chapter 8 of the forthcoming UKNEAFO, 'Barriers and Enablers to Embedding an Ecosystems Framework in Appraisal'.

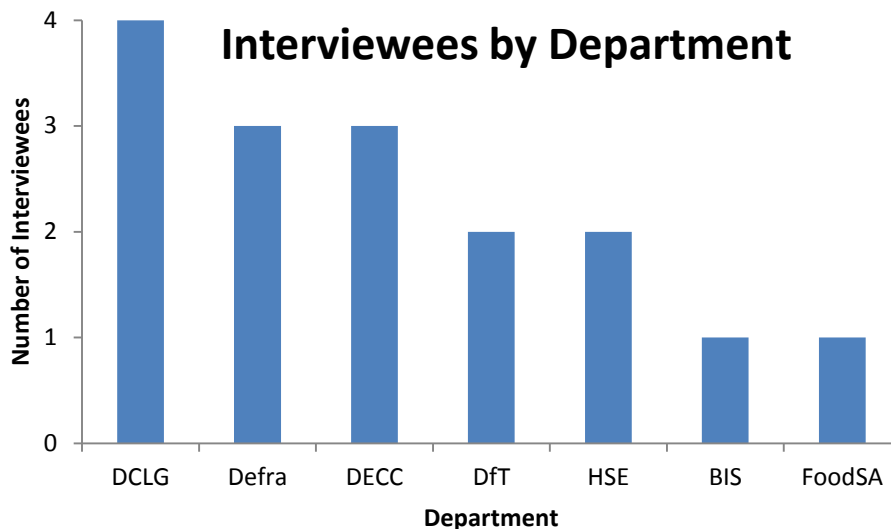


Figure 20: Interviewees by Department

The interview protocol was developed over several iterations with the research team and Defra. To answer the questions set out in the project specification, the interviews needed to address three main areas:

- To capture the ‘effectiveness’ of relevant environmental appraisal guidance and broader sustainability guidance as set out above: is it used appropriately, does it help ‘joined up thinking’ about sustainable development?
- To assess trends in accounting for sustainable development / environmental impacts; and
- To assess how the application of environmental appraisal and sustainability guidance makes a difference in policy terms. What is the practical impact of guidance: what would have taken place without it?

The findings in this section should not be thought of as statistical - we did not attempt to poll a large random sample of civil servants on standard questions, but rather adopted a semi-structured interview approach. The results presented below represent the opinions expressed during the interviews, which involved quite wide-ranging and frank discussions. In places our own interpretations and ideas are added: this is flagged as appropriate.

5.1 Evaluate the effectiveness of environmental appraisal and broader sustainability guidance.

As discussed in section 1.2, appraisal guidance has been changing: the most recent change is the publication of the Better Regulation Framework Manual (BRFM) in July 2013, which drew many sources of guidance together in one document. All of our desk

research and most of our interview research was carried out before that; therefore the majority of interviewees talked about separate documents (in particular the IA Toolkit) that still exist, but are now included within the BRFM.

5.1.1 Differences across departments

Each department tends to have its own appraisal ‘culture’, under the overall government umbrella provided by the Green Book. Often this determines where and how appraisers seek guidance, and in some departments the internal guidance is highly developed.

In Defra, over the past 10 years, there has been a lot of appraisal work on air quality, agri-environment measures, with appraisals accounting for environmental impacts in ‘traditional’ areas, in particular air pollution and carbon. Now attention is turning to more challenging areas. Via supplementary guidance and training on valuation and value transfer, Defra and the wider Defra ‘family’ (including for example Natural England, the Environment Agency, and the Forestry Commission) have seen a gradual progression and upskilling, with better awareness of issues and how to account for them. Impacts are not always monetised, but they are understood: the main gaps are in available evidence. Recent changes in Defra guidance aim to build on and extend the existing body of guidance and good practice, with a longer term aim of moving to fuller valuation of impacts.

DECC interviewees told us that DECC analysts are expected to use their supplementary guidance on ‘Valuation of energy use and greenhouse gas (GHG) emissions’ as the starting point for appraising DECC policies. For impacts such as health and air quality they are expected to follow the specific supplementary guidance, and to follow the Supplementary Guidance on Accounting for Environmental Impacts as appropriate. The DECC supplement links explicitly to the Green Book and other supplementary guidance - referring to and complementing them, rather than restating what is already available - and analysts are expected to use them when they are relevant. DECC IAs follow the structure set out by the BIS IA template and there is a strong focus on strict compliance with the appraisal guidance methodology. Key dimensions of IA appraisal in DECC include carbon valuation and valuing the health benefits from decreased pollution/improvements in air quality. Most other environmental elements are addressed qualitatively, though values may be used for local environmental impacts such as noise pollution from wind turbines and loss of aesthetic value.

Respondents noted the advantages of having guidance tailored to the needs of the department, but on the other hand strong internal departmental guidance can also represent a barrier for ‘mainstreaming’ cross-cutting issues, including many environmental/biodiversity impacts: one case mentioned was the challenge of integrating guidance on ecosystem service valuation with the DfT system WebTAG (Web Transport Appraisal Guidance) which uses a different framework for

environmental impacts. This is also documented in the DfT (February 2013) report “Applying an Ecosystem Services Framework to Transport Appraisal”.²⁹

As in DECC, WebTAG links to the Green Book and associated supplementary guidance. DfT Environmental Analysis Division aims, where possible, to ensure environmental and others impacts can be monetised. Transport schemes are developed over a long period of time, so there is more time to get information required than in some ‘faster’ policy areas. There is a Governance board in charge of agreeing appraisal values and units and of approving new guidance. There is inevitably a focus on assessing carbon impacts, and for this DfT follows DECC supplementary guidance on assessing and energy and emissions, translated into transport terms and made available internally on WebTAG. There is also a strong emphasis on monetising impacts on air quality, with WebTAG being updated³⁰ to reflect Defra’s Green Book Supplementary Guidance on valuing air quality. Impacts on food production and noise are also partly monetised (in the air quality and noise WebTAG units, respectively); the water and biodiversity WebTAG units each treat a number of ecosystem services qualitatively, and there is some qualitative inclusion of cultural heritage and aesthetic impacts in other WebTAG units. The 2013 DfT report on applying an ecosystem services framework to transport³¹ identified potential for additions to WebTAG, most notably recreation service, which is currently included only qualitatively and only in one WebTAG unit, biodiversity, but could also be introduced to the air quality, noise; landscape, townscape, heritage and water units.

Other departments also have internal guidance, for example the HSE Economic and Social Analysis Unit guidance on how to do an IA, but again this is grounded in and refers to Green Book and BRE information. It directs a new user towards the sources of information, where they can seek help, and documents some common conventions (the departmental appraisal ‘culture’), but does not duplicate or replace the GB.

Some departments rely more directly on central sources: in DCLG, for example, the main guidance sources are two that apply across government, the recent Better Regulation Framework Manual (BRFM) and the Green Book, with links to other

²⁹

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/193821/esa-report.pdf

³⁰ At the time of interview : June 2013.

³¹

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/193821/esa-report.pdf

relevant/supplementary guidance including Defra guidance. If a project has some specific impacts or sustainability impacts the person completing the IA should refer to the relevant guidance. However, across government stream-lined and fast-track IAs tend to have more of a focus on gross business and civil society costs. This means some indirect or wider marginal social impacts are not in these IAs.³² An interviewee noted *“I believe there are some concerns about these impacts not being in IAs. But I don’t think these would be big impacts. I think these would be quite small, marginal impacts.”* Indeed, the departmental quality assurance processes and the RPC review should pick up any missing medium to large impacts, and the results of the desk study presented above do suggest that major omissions are rare.

5.1.2 Guidance used

The overall picture is one in which appraisers generally know how to conduct standard elements of the appraisals they do, and turn to guidance when they need to check something or need help to do something out of the ordinary. One respondent made a clear distinction between the guidance on procedures available through BIS guidance, and the technical detail available via the Green Book, and saw these roles as distinct and complementary.

This leads on to another finding in the interviews that not all appraisers are using the most recent guidance and toolkit. Several respondents indicated that they were comfortable carrying out IAs and did not feel the need to turn to the guidance when conducting ‘standard’ appraisals, but would use guidance to deal with any unusual problems, though others suggested they would turn to colleagues for advice rather than turning immediately to guidance documents.

(Views on) awareness of Step 4 of the IA toolkit appear to be mixed, even within the same department. Similarly in regard to the supplementary Green Book guidance on accounting for environmental impacts. Most interviewees were aware of the guidance, but thought detailed awareness and use were generally low, though again this varied even within the same department. One person who had used it reported the approach to be useful: not easy to do, but the guidance helped a lot. A push from senior colleagues committed to exploring environmental and social impacts was important in driving the use of the guidance.

The explanation for these divergent views is that people tend to engage with the guidance for specific reasons, rather than as a matter of course. In discussions

³² In principle, there is nothing to stop departments preparing a full IA for write-round purposes; the fast-track IA just minimises the level of RPC scrutiny. However where only the fast-track IA is produced this may result in smaller impacts being overlooked.

regarding guidance documents generally, several respondents noted that they had heard of, or had sight of, various guidance documents but had not actually used them or read them in detail. Pressure of work was one reason given for low awareness: *“You look at things when you have to rather than reading them in advance”*. Another explanation offered was favouring “tried and tested” methods; senior management expectations and historical factors can contribute here.

One solution to this is working to integrate new guidance into tools and frameworks that are regularly used; and this is indeed being done, for example through the changes to WebTAG.

5.1.3 Proportionality

The extent to which wider impacts are taken into account is constrained by the need to maintain proportionality in the appraisal, and this is well recognised. As summarised by one respondent, *“I think it should be about proportionality. If you follow guidance there is quite a lot of work involved, and there is a trade-off between fully monetising a marginal figure and having a non-monetized section which may be sufficient in certain areas. If something has big impacts then I think you should go through the whole process.”* Respondents also called for greater clarity regarding what was proportional.

There was some evidence of a view that overarching regulatory structures could ‘deal with’ wider environmental impacts. One respondent, for example, noted *“you have to follow some environmental regulations to ensure that you don’t damage the environment: the question is whether the regulatory framework is enough to ensure that you consider these elements, because if it is enough then it is unnecessary that you put a lot of weight on these impacts.”*

It is certainly reasonable to expect that various rules and regulations be followed, but this is not the same as assuming that an impact can therefore be left to one side for appraisal purposes. The residual impacts should be considered, if it is proportionate to do so - that is, if the residual impacts are deemed potentially significant in the context of the policy. At a strategic policy development level, leaving the wider environmental impacts to be addressed at project level runs the risk that the cumulative impacts be overlooked. Further clarity may be required on this point.

More generally, there is an understandable tendency for departments to focus on their own guidance and their own priorities, partly justified by proportionality. Supplementary guidance and other forms of cross-government cooperation can seek to reduce the burden of dealing with impacts that are ‘secondary’ to the main focus of a policy area, thereby facilitating their inclusion in IA.

There is recognition that the extent to which wider impacts are taken into account is constrained by the need to maintain proportionality in the appraisal. This can mean that some benefits that could in principle be quantified or monetised should not be, if this estimation is very resource-intensive, highly uncertain, and/or unnecessary in the context of establishing the case for the policy change.

The IA of the 'National Flood and Coastal Erosion Risk Management Strategy: England' (February 2011) provides quite detailed information on the monetised impacts arising from administrative changes as a result of the strategy. The strategy also describes how flood and coastal erosion risk management has a profound impact on the environment and that there are key dependencies between the management of flood and coastal erosion risk and the health and sustainability of certain features of the natural environment - especially wetlands and coastal landscapes. It highlights that with the strategy greater clarity and better coordination of flood and coastal erosion risk management should lead to more efficient and effective approaches delivering greater benefits from the same level of investment. None of the wider benefits were monetised, but the IA states that with an annual investment of more than £500 million per year, even very marginal efficiency improvements of less than 0.1% would significantly exceed the costs of the strategy. Monetisation of the wider benefits of the strategy itself could be possible to some extent, and mapping out the range and extent of potential wider benefits would be feasible, but neither is really necessary to establish that the strategy is beneficial, therefore it can be considered proportionate in this case to limit the effort expended on quantifying benefits.

The IA 'Impact Assessment - Planning Policy Statement: eco-towns' (July 2009) states that many of the benefits are likely to vary according to location and specific context, and these details cannot be captured in the high level analysis possible for the IA. The IA does appropriately list and briefly describe a wide range of environmental impacts, mostly beneficial effects. The relevant categories of ecosystem services are listed, but the IA goes no further in this respect. There is potential to have been more comprehensive with the quantification and monetisation of the identified environmental effects, but this would be with a high level of uncertainty. The IA acknowledges that the estimated benefits are likely to be an under-estimate due to the lack of quantitative evidence for many benefits, and because the specified assessment period does not capture the continuing flow of longer-term benefits. Where possible, the evidence base provides a description of the likely nature of the non-monetised benefits and states where and how they are expected to be realised.

Box 8: Proportionality in IAs

5.1.4 Quality control

The role of the RPC in approving (regulatory³³) appraisal has been noted above. Prior to RPC, thorough internal scrutiny is important. One senior official noted *“The scrutiny is not at the end of the process, it begins at the start of the IA to ensure that your counterfactual is well defined and that your analysis you are doing is what you expect because at the end of the processes there is not much you can do to fix it. We probably spend too much time making sure IA’s are right and well structured.”* Generally there are several levels of scrutiny and peer review prior to sign-off at senior (Chief Economist or delegate) level. Interviewees explained that senior scrutiny is not necessarily linked closely to the guidance, but rather aims to ensure that analysis is robust and proportionate, “fit for purpose”. The expectation is that junior officials should use guidance, but scrutiny does not focus on whether or not this is the case, but rather on whether the IA meets requirements.

Scrutiny can also involve internal departmental review groups and Better Regulation teams. For IAs with significant impacts on energy or climate change, there is an inter-departmental analyst group (IAG) chaired by DECC, aiming to ensure IAs use the right guidance, to discuss analytical issues and to disseminate information.

The RPC’s assessment of the final stage IA focuses primarily on the assessment of the costs to business and civil society, the One-In-Two-Out (OITO) classification and the Small and Micro Business Assessment. However, the RPC will also comment on the overall quality of IA at the consultation stage and at the final stage. Narrative is given on other aspects affecting the overall quality of the IA. If an impact is identified, it has to be captured and assessed sufficiently, and the RPC checks this. In particular, the RPC seeks to check whether, and how, the identified benefits stack up to the (highly scrutinised) costs to business. Many IAs have important un-quantified benefits, and RPC can then require evidence on what types of benefits there might be and how they can be quantified, even if monetisation (required for direct comparison with costs to business) is not feasible. The NAO (2012) has identified that more effort needs to be invested into quantifying un-monetised impacts in IAs.

Interviewees also suggested that the RPC can sometimes be used as a “sounding board” - if there is uncertainty about whether it is proportionate to include an impact in an IA, it may be excluded (not even mentioned or discussed qualitatively), waiting to see if the RPC pick up on it - though this applied to small deregulatory measures, not new wide-ranging regulations. Seeing the RPC approval as validation that an IA is fit-for-purpose, one respondent noted that anything beyond that level is “gold-

³³ The RPC only sees regulatory measures, not taxes and levies, so for example the Renewables Obligation is a tax and does not go to RPC.

plating” and involves detailed work that may not be practicable, especially given high pressure of work. Others noted that the RPC focus is very much on the costs to business and civil society, and this can influence what is seen as proportionate for other impacts, especially for fast-track IAs.

5.2 Extent of Guidance

Overall the feeling from interviews was that the extent of guidance was “about right”, but that the accessibility of guidance, and the integration between Green Book and other guidance documents, could be improved.

Some interviewees stressed that their internal departmental guidance provided the best fit for their needs. Several cited the Green Book as a ‘Bible’ reference, and also noted that though it was complex, this was necessary. The Green Book and supplementary guidance serve two distinct audiences: the Green Book written in fairly plain English, usable by a general audience, and more technical details in supplementary guidance targeted primarily at economists. Non-specialists will not often need to access the full details of guidance, since policy officials will generally require input from economists, and *“for economists, the guidance is clear and well written.”*

Others complimented the *“good co-ordination”*, between departments and the Green Book team working to ensure that supplementary guidance is complementary and avoids duplication, though there were also less favourable comments about the diversity of styles, and the long and detailed nature of some guidance. On the other hand, it can be *“reassuring”* to know that detailed sets of guidance for ‘niche’ areas are available if the need arises: *“I never feel overwhelmed, as I know exactly where I’d find the information I’d want to find - and maybe if there was any less, there wouldn’t be the level of detail you need without going to the policy area and asking for more information.”*

The BIS 2011 IA Toolkit (and now the IA Toolkit in the Better Regulation Framework Manual) is overarching, and more easily usable by a wider/more generalist group - described by one interviewee as *“largely common sense and useful from an analysts point of view...Generally people are very happy with the Toolkit.”* There is however some frustration regarding the frequent changes in guidance: *“it would be useful if they could leave it as it is for a year or two just so you could become familiar with it as opposed to constantly trying to catch up.”*

So both the Green Book (family) and the Toolkit are seen as appropriate, for specific uses and users. Some interviewees commented on confusion arising from weak linkages between Green Book and Toolkit, with calls for guidance to be made more accessible and brought together in a better way, in particular with regard to integration of Sustainable Development issues. These comments predate the

publication of the BRFM, which draws together guidance and includes questions to guide broad, holistic thinking about sustainable development.

5.3 Monetary valuation

5.3.1 Demand for monetary valuation of environmental impacts.

Two important criteria in IA are the EANCB (Equivalent Annual Net Cost to Business) and the NPV (Net Present Value) which provides wider coverage and should capture all the monetisable impacts. Monetisation is to be achieved wherever possible and helps to ensure that the NPV gives a good representation of overall impacts on society.

Several interviewees noted their departments' interests in better quantification and monetisation of key impacts in their sectors, while also stressing proportionality and feasibility. Robustness and the ability to defend values was seen as important. Some valuation information is often available for non-market impacts, but *"there are always issues with transfers and applying to other scenarios, and sometimes it's difficult to do in a robust way."* The importance of good guidance was also stressed, and in particular where valuation is difficult or technical, the relevant departments need to take the lead in providing guidance on how to value (as indeed they do), with emphasis on increasing the weight of evidence to support robust monetisation. Alternatives to monetisation were also noted, for example possible uses of subjective well-being measures.

5.3.2 Implications of not monetising

There is some disagreement on the implications of not monetising more impacts. Some interviewees thought that adequate weight was already given to non-monetised impacts, via consideration of qualitative assessments. However several expressed a number of reasons why environmental and social impacts were often overlooked or underweighted. One noted *"the IA is about looking at different options against your counterfactual, so if there are different options and they have a different impact you cannot value, then it is very difficult to make that trade-off or to make that point have a lot of weight in the policy decision on what options you are going to take into account. So the rest of your CBA will really have more weight because you can compare and monetise."* If this is the case, it would imply that a lot of environmental and social impacts, non-monetised, would be under-weighted in comparison with those economic impacts that can be monetised. The desk-based analysis reported above suggests that indeed many such impacts do receive less appraisal effort than could be considered proportionate.

The balance of costs and benefits that can be monetised may also impact on what is proportionate to consider. One interviewee pointed out that, while a focus on the monetised NPV can mean that any non-monetised impact doesn't hold as much weight within an IA, the implications of this depend on the balance of costs and benefits: *"If you've got a policy that is quite marginal, and has quite a lot of non-monetised*

impacts, they would hold more weight in this IA, but it is rare for non-monetised impacts to tip the balance on an IA/value for money scheme when the policy is less marginal.”

5.3.3 Ecosystem services

Respondents recognised that there could be more ecosystem service thinking/valuation feeding through to IAs, though this is in progress, via the Supplementary Guidance published in 2012, moves to integrate this with other appraisal methods (notably WebTAG), and various research on ecosystem services assessment and valuation. Ecosystem services thinking is likely to be helpful in some areas, but interviewees also recognised that the current ecosystem services framework is not well adapted to all aspects of policy impacts and could clash with thinking in terms of categories of impact (such as noise and waste management), where the links to ecosystem services are not always clearly made. So the framework is a valuable addition to the IA process but does not replace thinking about wider environmental impacts or overall effects.

The IA for the Marine Strategy Framework Directive - targets and indicators for Good Environmental Status (October 2011) looks at the potential impacts of options for UK targets and indicators of Good Environmental Status (GES). In order to assess the potential implications of the proposed GES targets and indicators, a range of illustrative management measures are considered.

The IA uses an ecosystem services framework to identify the social and environmental impacts of the policy. Most benefits of achieving the GES targets are described qualitatively, but not monetised. Benefits include greater mitigation of climate change impacts. The bioremediation of waste is described, and the visual impact of litter is described but not monetised. Improvements to seafloor habitats under GES are mentioned, with implications for regulating services including air quality. Impacts on water pollution are described. The IA mentions the issue of underwater noise as an impact on marine species. Costs, including costs to businesses associated with noisy activities and the cost of waste management related to marine litter are also given.

Although there is no quantification of the environmental benefits of the policy, this IA is considered as proportionate / appropriate given the evidence base (which is quite limited insofar as economic valuation goes), the importance of the impacts and the fact that it is at consultation stage. The ecosystem services framework has helped to ensure that the full range of possible impacts is considered and recorded. Further work on quantifying the impacts will be conducted in a final IA; the final measures for achieving GES will be subject to a full cost-benefit analysis and impact assessment process during 2014.

Box 9: Use of ecosystem services framework in IA.

Overall, it is a little early to say how ES thinking / framework is likely to influence IAs. This is still a work in progress, and awareness is not yet high.

5.3.4 *What are the policy-relevant gaps in environmental valuation evidence?*

Some areas are definitely perceived as well-researched. Carbon valuation, value of life, value of injury are all seen as robust - though this is not the same as 'perfect': there is recognition that even robust and long-standing values can always be improved. Several interviewees noted the importance of appraisal teams engaging where appropriate with peer reviewers, academics and experts to inform the evidence base and keep it up to date.

Some other value figures are used, but considered less robust: for example for amenity value of land are used, where values are based on stated preference studies described as having "*a certain amount of rigour*", but values from hedonic studies of market data would be preferred.

One respondent noted that there is often more evidence than might be expected: "*it has surprised me that you can use benefits transfer to at least provide an illustrative example for quite a lot of impacts - if people know where to go for their benefits transfer figures, and I think that maybe that's the problem. But I initially thought that there was nothing and that that was the biggest problem, that you have to have new WTP studies; but benefit transfer is actually possible for a lot of things.*"

In many cases, however, though evidence is available, making benefit transfer theoretically possible, it is also highly uncertain, meaning that it is not considered sufficiently robust for inclusion in headline figures for benefits. How this is dealt with then depends partly on the appraiser/department culture. Some appraisers will include less robust evidence with appropriate disclaimers ("*because of the uncertainty in the evidence and the indicative ranges I've just had to have it as an indicative example*"), while for others the decision is more black and white ("*in terms of valuation, either you have a clear valuation metric or you do not.*").

It should be stressed that, in many cases, the missing evidence is not the monetisation evidence, but rather the scientific evidence linking a policy change to a resulting environmental change and/or to a final change in ecosystem service provision.

There is a general view (expressed by some interviewees, but also, we believe, quite widely held) that values must be 'robust' before they can be used. And there is (we suspect) a tendency in the economics profession to consider that robust values come from well-conducted valuation studies or meta-analysis, and that cost-based measures are much less appropriate, and of little use in cost-benefit analysis because of the circular reasoning involved (i.e. estimating the benefit of avoiding some environmental impact by calculating the cost of avoiding the impact leads to a spurious cost-benefit

ratio of 1, because the ‘benefit’ estimated is in fact the cost). This is what economic theory teaches us, after all.

This reasoning is sound enough, in the sense of a single cost-benefit analysis, but it should also be recognised that arguably the most successful set of values actually applied in government - DECC’s carbon valuation guidance - is explicitly grounded in mitigation-cost-based estimates. The decision on appropriate carbon mitigation is, in practice, a strategic and political one, drawing on overarching cost-benefit arguments set out for instance in the Stern review³⁴: taking that decision as given, economic theory then states that achieving a carbon reduction target in an economically efficient manner requires equalising the marginal costs of cutting emissions from different sources, and this implies the use of a standard carbon value consistent with attaining the target.

Finding in the interviews included two relevant points: firstly that appraisers like the ease and robustness of the carbon valuation approach, and would welcome similar value sets for other impacts; and secondly that some other impacts may at present be left out of appraisals with the justification that cumulative impacts are taken into account at a strategy/plan level and/or via other constraints on uses of the environment. But this justification is not really adequate, both because residual impacts should be taken into account, if proportionate, and because efficiency requires that strategic targets should be achieved in a least-cost fashion.

Furthermore, matching guidance to policy contexts is not always straightforward: in some areas, values will change according to various important factors. There is a challenge in setting values and associated guidance while still leaving scope for policy developers / appraisers to think innovatively in sustainable development terms when that is appropriate. Guidance may be needed to ensure that appraisal responds appropriately to varying contextual factors. Keeping assessment both appropriate and proportionate means avoiding excessive complexity but also avoiding oversimplification.

One option here is to make wider use of valuation evidence to derive context-dependent value functions, in keeping with the existing guidance, including guidance on value transfer. An alternative avenue to consider is a more generalised attempt to derive some environmental impact or ecosystem service ‘values’ on the basis of the costs of meeting strategic/political agreements about appropriate targets. This should not replace efforts to derive value-based estimates, but rather could extend the evidence base where value-based estimates cannot be derived, or where the

³⁴ Stern, N (2007) *The Economics of Climate Change: The Stern Review*. Cambridge University Press. ISBN 9780521700801

application of value-based evidence is too complex to be proportionate in the context of general IAs. The approaches could even be complementary, since more complex willingness-to-pay based evidence could be used to determine the strategic goals. The estimated costs of achieving these objectives could then be used in lieu of value evidence, as robust figures to be applied in simplified fashion across IAs. Appraisers would face less uncertainty regarding appropriate choices, and could implement the valuations faster. The more difficult, time-consuming and technical aspects of full valuation would be left to experts, strategic/planning decisions, and IAs of policies with a primary focus in the relevant area.

Defra may wish to review in more detail (perhaps at a later stage, when recent changes in guidance have had more time to work through) how and where value transfer is being applied in appraisal. There can be little doubt that proper value transfer would give more robust results than 'off-the-shelf' values; but on the other hand, if value transfer is being widely deemed too complex to be proportionate, an off-the-shelf value may be preferable to no value at all. For these reasons the provision of 'default' values is worth considering, in particular as a way of helping appraisers to take account of impacts that are secondary to the main aims of the policy - for example, using a standard 'biodiversity' value would be inappropriate in an IA focusing on conservation policy, but might be appropriate (and proportionate) in IAs of transport policies that have secondary impacts on biodiversity.

Beyond the existing evidence base, there is a wide range of policy needs, and a general willingness to use monetary valuations if robust evidence and guidance can be provided. The challenge for Government is how to prioritise valuation and related work: for resource reasons, most work is value transfer rather than primary studies. Is it possible to make better use of the existing evidence? Particular gaps and priority areas identified in the interviews include:

- Land/ land-use related areas: there is in fact lots of valuation work on different services and habitats, in particular on wetland values. These values can be applied, and indeed now are used in many different contexts. But, attitudes towards these values and their use vary. On the Severn, for example, uniqueness of the site might suggest primary work would be necessary, at least in later stages. Further work in drawing together and improving the evidence base for value transfer would be useful.

- There is currently little use of evidence for assessing impacts on water quality,³⁵ although there is academic work on this. Work to make better use of evidence could help.
- Further habitat-by-habitat valuation of services would be very useful. Meta-analysis is flexible and can help deal with differences in context. Conducting meta-analyses for different habitats where these are currently not available would be useful - a review of scope to carry out such studies could be carried out.³⁶
- Work on recreation, in the National Ecosystem Assessment (NEA) and using Monitor of Engagement with the Natural Environment (MENE): options for more analyst-friendly and spatially specific tools.

5.4 Assess how the application of environmental appraisal and sustainability guidance makes a difference in policy terms

Developing evidence under this question heading proved very challenging. It is always difficult to demonstrate a counterfactual - i.e. “what would have happened had the guidance not been available/followed?” - and answers would inevitably be subjective. Moreover, interviewees did not feel able to discuss such counterfactuals. For example, one stated: *“I’m not sure I can tell you what a huge impact is - we have decided not to pursue a particular policy perhaps - but I have not seen that. So I think that people are taking these things into consideration, but I cannot tell you whether it has changed the way the government has made decisions.”* An additional problem here relates to the interview finding that often guidance is not actually followed as intended, being used late in the process, or in some cases not referred to at all directly (with appraisers depending instead on past experience), and obviously this makes it difficult to say what impact guidance has had.

5.4.1 Sustainability thinking

There is evidence of “sustainability thinking” across government, but it is difficult to link this conclusively to particular (uses of) appraisal guidance. For example, respondents noted that *“Ministers very much take an evidence-based approach to policy making, including evidence on environmental and social impacts”* and highlighted specific areas where *“an integrated approach to environment and social*

³⁵ The ADAS software ‘FarmScoper’ can be used to estimate the costs of on-farm measures to reduce water pollution, but does not seek to value the impacts of reductions <http://www.adas.co.uk/Home/Projects/FARMSCOPER/tabid/345/Default.aspx>

³⁶ See also Valuing Nature Network, <http://www.valuing-nature.net/>

impacts” was deemed particularly important. It is clear that appraisal guidance can help in these areas, but it is much harder to argue (whether for or against) the idea that appraisal guidance has facilitated or even encouraged particular forms of thinking.

Nevertheless there are some areas in which interviewees explained that sustainability thinking is not to the fore (for example “*typically wider environmental impacts don't come into conversation*”). Where this is the case, the available guidance has not encouraged thinking about the wider environmental and social impacts. Similarly, the case of stream-lined and fast-track IAs with a focus on business impacts has already been noted above (though policy teams may still prepare full IAs for cross-Whitehall write-round purposes, these IAs would not be scrutinised by the RPC). These cases are similar to the points made previously regarding the RPC focus on reducing regulation and costs to business. The root is essentially a matter of priorities, including proportionality (fast track avoids expending substantial appraisal resources on deregulatory policies or policies with low costs to business), so it is difficult to argue that guidance on appraisal for sustainability is at fault, or that changes in it can offer a solution. But, appraisal guidance can help government officers to demonstrate where costs to business may be considered justified, by quantifying other impacts. It should also be stressed that the fact that a policy is deregulatory or involves low cost to business does not necessarily imply that its environmental or social impacts must be minor. This suggests that more could be done to emphasise the principle that all impacts should be monetised if possible.

The issue of dealing with cumulative impacts was also raised - that is, the problem of multiple small impacts, each deemed insignificant (or disproportionate to consider) for particular policies, but together making a significant impact that is not taken into account. One interviewee flagged that this issue did arise, with a lot of IAs being small scale with impacts that are “*not really worth considering*”, but thought that this is only really a problem if the (cumulative) impacts are not being addressed at the strategy/overall plan level. Another part solution to this issue could be to publish regular (e.g. annual) summaries of the overall impact of government policy on key indicators: “*This is very telling because it makes ministers think about the full impacts.*” However this would be a resource-intensive exercise.

So, is there a need to push further toward a more holistic approach to sustainability in IAs? Again, respondents stressed proportionality, and an appetite for robust valuation evidence. As noted above, valuation based on ‘off-the-shelf’ value transfer hardly constitutes holistic thinking about sustainability, and is not appropriate for policies with extensive impacts or a strategic role, but may well be appropriate and proportional where the environmental impacts are more incidental to the main policy goals.

5.4.2 SITs / tick-box approach

As noted above, recent changes in appraisal included the removal of tick boxes for SITs in the appraisal template, though the guidance relating to wider environmental impacts is still in place. The rationale was concern that the tick boxes created a ‘box ticked’ mentality, and did not encourage analysts to think through the issues and the connections between them. But on the other hand, the tick boxes did make the issues highly visible, and without them there could be a risk of overlooking some (probably less significant) impacts. Both views were presented in interviews: perhaps this depends not so much on the guidance, as on the individuals using it. Some stressed that having to give more detailed written argument was important: ticking a box is easy, and one can think that the reasons are clear, but actually having to commit them to paper is an important way of checking this.

One specific question of interest is whether the specific guidance on valuing carbon or air quality impacts has helped or hindered the assessment of wider natural environment impacts. Views on this point are also mixed, with some arguing that presence of a carbon number and clear methodology raises wider environmental aspects, while some thought that a ‘box-ticking’ mentality can allow people to think that valuing carbon impacts amounts to monetising environmental impacts.

So the views here are mixed. It seems likely, though, that the situation may depend on the subject of the IA and the experience of the appraisers. Where the IA deals with a policy with multiple potentially significant (wider) environmental impacts, and the appraisers are familiar with this sort of policy, they are likely to think about the impacts in some detail: the absence of a tick-box section is unlikely to be a problem. The thinking may be piecemeal or it may be holistic (across sustainable development pillars), but there is little risk of stopping at carbon/air quality and thinking that ‘environment’ is done. On the other hand, where there are fewer, more minor potential impacts, and where these are secondary to the main policy interests of the appraisers, these risks do arise and the SIT approach may help ensure all possible impacts are considered. The new BRFM takes this point on board and has some questions in the IA Toolkit section designed to help analysts to think about the various impacts.

The IA 'Directive on Promotion of Clean and Energy Efficient Road Transport Vehicles' (November 2010) explores, quantifies and monetises a number of air quality impacts. Effects on carbon emissions are also quantified and monetised. Uncertainty/sensitivity is treated, and different emissions scenarios are considered. However, no other wider environmental impacts are identified. This IA could be an example where the focus on the direct effects of the policy and monetised impacts (carbon reduction and air pollution) has detracted attention from other potential wider effects; on the other hand it might be argued that the omission of wider impacts is proportionate. Fuller description of the rationale for excluding wider impacts would provide greater clarity on this point. Ensuring that this descriptive trail is provided is one of the objectives of removing the 'tick-box' element of these tests.

The IA 'Impact Assessment of Euro 5 and 6 Light Duty Vehicle Emission Standards' (June 2008) takes a less rigorous approach to uncertainty, but goes further in quantifying and monetising wider impacts where possible. Reductions in emission of air pollutants is quantified with some sensitivity analysis. Resulting impacts on public health is monetised. The IA also identifies and monetises a reduction in the soiling of buildings due to reductions in particle emissions from diesel vehicles; impacts on recreation and aesthetic values are described. Effects of reduced acid and nitrogen deposition in ecosystems are quantified.

Both IAs could potentially benefit from a more explicit use of the ecosystem services framework to keep track of a wide range of possible impacts, even where it is determined disproportionate to expend significant appraisal effort on the less significant impacts. For Transport IAs, the integration of the ES framework in WebTAG can be expected to achieve this, again enhancing clarity about what has and has not been considered in constructing an IA.

Box 10: Clarity on treatment of wider impacts.

5.4.3 Actual vs. realised roles of IA guidance

IA and the assessment of impacts can be slightly different things, in practice. IAs are meant to be a policy development tool, used to help shape evidence bases, and feeding into early stages of policy development. However, some interviewees noted that this does not always happen in practice. This did not mean that evidence gathering was left to the last moment, but rather that it was not always translated into IA form until a late stage. Where this is the case, appraisal guidance is not being used until too late to influence policy development.

In effect, while IAs are meant to be used as a policy development tool, increasingly their prime use is perceived as a tool to go through the deregulation framework. This depends on departmental cultures, but can create a situation in which the

institutional incentives are to carry out IA primarily to satisfy the RPC, with a strong emphasis on cost to business, and possible disincentives for environmental and social assessment to be prioritised within IA processes.

In other words, there can be a difference between how IA should be done, according to the guidance, and how it is actually done. Where guidance is not followed, this could be considered more of an institutional/cultural problem than a shortcoming of guidance. One solution here is to assemble all key people, including analysts, at the start of the policy process. It was also noted by one senior official that influencing policy development across Whitehall may be achieved more effectively through focusing on key drivers of environmental policy than by changing guidance.

6. Conclusions

6.1 Overview of baseline evaluation

Key points: When policy proposals have potentially material impacts on sustainable development issues:

1. Over half of IAs assess sustainable development issues in an appropriate and proportionate manner;
2. Quarter of IAs could improve rigour of analysis, in particular for social and environmental aspects; and
3. A fifth of IAs omit some possible impacts, however omissions of potentially major impacts are very rare.

The initial desk-study phase of our research, based on IAs from August 2011 to the end of 2012, suggests that **around a third of all IAs covered proposals with a range of potentially significant impacts such that a robust sustainable development perspective would have been clearly appropriate.**

The extended analysis, covering IAs since 2008, suggests that **of these IAs slightly over half (58%) seem to be striking an appropriate balance, assessing SD issues in an appropriate and proportionate manner.** About a quarter (24%) appear to be identifying all the impacts but could improve rigour of analysis, and about a fifth (19%) appear to be missing some SD impacts that ought to have been considered. While over 80% of IAs treat material economic impacts with medium or high rigour, 52% and 50% of IAs respectively treat material social impacts and environmental impacts with low rigour or not at all.

The more detailed analysis of environmental appraisal gives deeper insight into these figures. **‘Serious omissions’³⁷ of “wider environmental impacts” are very rare. On the other hand, simple ‘omissions’³⁸ are common, affecting around half of wider environmental impacts identified.**

By and large, ecosystem services language has not penetrated much into published IAs. Many possible ecosystem service impacts have been missed, though this includes many

³⁷ Taken to mean wider environmental impacts deemed “high impact” in our analysis, but given no or only superficial treatment in the IA, or “moderate impact” with no treatment in the IA.

³⁸ Taken to mean a low impact that is ignored, a moderate impact that is treated superficially, or a high impact that is treated only in part.

fairly marginal impacts. The proportion of omissions does appear to have fallen since the recent changes in guidance, with a little under a fifth of ES impacts missing from more recent IAs. **However, 70% of ES impacts in these IAs are noted without any detailed assessment.**

There does not seem to be any other systematic influence of the year or department on the apparent quality of the IAs. There does appear to be a small but statistically significant decrease in the number of false positives³⁹, consistent with the idea that the change in guidance may have discouraged a ‘box-ticking’ approach to covering issues.

The quality of IAs does appear to be influenced by ‘complexity’, in that IAs that have two or especially all 3 SD pillars significantly impacted tend to score slightly lower in our assessments. Since almost all IAs assessed show economic impacts that can be considered material to the decision, this finding seems to show that **the added complexity of dealing with material social and/or environmental impacts is challenging, leading to cases in which additional analytical rigour would be useful.** One explanation is that data and appraisal methods may often be less familiar and accessible for these impacts. It remains to be seen if the revised guidance and associated training will lead to improvements here over time.

6.2 How might guidance be improved to increase practical uptake in a proportionate way?

Key points: Guidance, including recent changes to it, is of good quality. Particular challenges for increasing uptake are:

- 1. Creating a culture across government that expects environmental and social impacts to be taken more seriously and addressed alongside other (especially economic/business) impacts; and**
- 2. Finding better evidence and novel methods for expressing environmental and social impacts in monetary terms, where appropriate and feasible.**

There is a Green Book review this year: this is focusing on consolidations and updates rather than any major changes. The Natural Capital Committee, in the last State of Natural Capital report⁴⁰, flagged areas of the Green Book that should be revisited,

³⁹ Potential impacts that are discussed in the IA but which should not have been identified as possible impacts of the policy under consideration.+

⁴⁰ <http://www.defra.gov.uk/naturalcapitalcommittee/files/State-of-Natural-Capital-Report-2013.pdf>

linked to the agenda for sustainability of natural capital stocks, accounting for cumulative impacts and so on. These features are not yet embedded in guidance.

There is of course scope to expand and improve guidance. However, there were some strong suggestions that the key issues facing attempts to mainstream valuation are not related to guidance, but rather to **creating a culture within other departments that expects environmental and social impacts to be taken more seriously, addressed alongside other (especially economic/business) impacts, and expressed in monetary terms where appropriate and feasible.** This is envisaged by the Government's Natural Environment White Paper and is in line with Green Book principles.

Particular challenges to bear in mind include:

- Experienced analysts may rarely feel the need to turn to guidance, and may not be fully aware of more recent changes.
- IAs may follow departmental cultures, meeting expectations of senior management rather than following latest Government-wide guidance developments.
- Simple pressure of work means that formal IA may not take place until quite late in the policy development process.⁴¹
- Pressure of work also means staff refer to new documents only when they have to, and face problems trying to keep up with rapidly and repeatedly changing guidance/procedures.
- Following guidance may not be perceived to be the highest political priority, compared to achieving RPC clearance, for regulatory IAs.

Persuading people to follow guidance in more detail requires convincing them that there are clear risks involved in not properly considering the guidance. At present, there appears to be little downside risk from not applying environmental guidance in most IAs.

In practice, convincing people that there are risks to not following guidance may require **shifting the focus of appraisal methods somewhat away from general achievement of sustainable development objectives towards a framing more focused on demonstrating the monetary value of benefits,** putting them on the same

⁴¹ Defra is working to change this using the Policy tracker tool, with economists, lawyers and policy officials meeting at the policy inception to discuss options, whether Government is best placed to intervene, and whether a formal IA is necessary. This should lead to IAs becoming working documents that are constantly revised as new options arise or old ones dismissed, rather than something that is done at the end of the process.

unit and footing as costs and benefits to business and civil society. These changes are not necessarily fundamental, but rather semantic and strategic means of demonstrating the importance of wider impacts in a language that matches political priorities. One specific suggestion made was for Defra to carry out an analysis of the policy impacts on biodiversity which could be brought to other Chief Economists to demonstrate the potential loss of value involved (noting that the UK National Ecosystem Assessment / Follow-On should provide the necessary information).

There is unavoidable difficulty with some impacts and contexts that are not easy to describe, measure and evaluate: the default is not to tackle these issues, with implicit 'zero value'. The challenge for guidance is to provide method and details to help analysts navigate these areas. **Finding better evidence and novel methods for expressing their value in monetary terms** (whether grounded in willingness to pay or cost-based methods) is one way to provide figures that can more easily be included on an even footing with quantified economic impacts.

6.3 What support or other incentives do other Departments need?

Key points: Support is needed across government in the following areas:

1. **Supplementing guidance with strong training in its use;**
2. **Integrating new ideas and methods within the existing appraisal frameworks of different departments;**
3. **Providing default values for some impacts, to be used where the impacts might otherwise be overlooked; and**
4. **Monitoring progress in government appraisal, and taking further action as and when appropriate.**

We have argued above that guidance alone is not necessarily a good tool for mainstreaming environmental or social concerns across all policy areas. However, **guidance supplemented with strong training could be more effective.** Simple dissemination or signposting of guidance through Government Economic Service networks, could be increased, but is not itself sufficient to increase uptake - busy people do not have time to read it on receipt, and may not recall to look into it later when it would be appropriate.

There is a need to integrate new ideas and methods within existing frameworks, which display their own historical and cultural features. Challenges for departments such as Defra, seeking to mainstream their policy concerns right across government appraisal, are:

- **To work with other-department systems** (where they exist) to provide simple guidance and preferably monetised values that can be incorporated seamlessly within existing tools and cultures (such as WebTAG). For example, the DfT

environment subdivisions in WebTAG do not match to the Defra ecosystem services framework, requiring additional work to reconcile these approaches.

- **To ‘make it easy’ for appraisers in Defra and other departments, for example by preparing default values for basic environmental appraisal**
- **Increased outreach and training initiatives, for example through a Green Book seminar series in which each department could present details of methods used, grounded in actual examples.**

There is a difference in framing and coverage between the ‘wider environmental impacts’ and the ecosystem services framework, making the frameworks complementary rather than alternatives. This can be a source of confusion, and **some further clarification may be useful here to ensure that analysts understand that these are not ‘either-or’ options, nor lists of boxes to tick, but rather two complementary frameworks that might help them to think through the possible impacts of the policies they are evaluating.**

Progress could be monitored on an ongoing basis using the same methods applied in this research. Many of the changes to IA guidance are rather recent - the Supplementary Guidance on Accounting for Environmental Impacts dates from February 2012, that on Valuing Impacts on Air Quality from May 2013, and the BRFM from July 2013. These changes will take time to work through to published IAs. Repeating the analysis on an annual or biennial basis would allow a regular monitoring of progress. We would suggest combining the two databases, i.e. assessing both the overall approach to sustainable development, and the deeper assessment of approaches to environmental appraisal, for all IAs in a sample. A sample size of 30-40 IAs per year should be adequate, though advice from statisticians could be sought here.

Annex 1. Method

The sections below detail the methods applied in the research.

A2.1 First stage database

The IAs for assessment have been recorded in an Excel spreadsheet with a page summarising basic information and another holding the analysis of the research questions. Basic information includes:

- ID - unique identifying number for our research, composed of Department initials followed by a year and letter (e.g. DfT_2008_A, etc.)
- Title of the impact assessment
- Date of completion
- Department
- Policy Objectives and Intended Effects
- Additional Information
- IA Stage (e.g. consultation; final)
- RPC Decision
- Main Contact, Team/Unit
- Best/central estimates of NPV, costs, benefits.

The second sheet includes columns for the more detailed assessment of the research questions, under the main question headings.

Q1: Were the 3 Pillars sufficiently accounted for (i.e. all relevant SD impacts appraised proportionately)?

- What guidance was used/cited (if any)?
- Which template was used (IA toolkit, Specific Impact Tests)?
- What was the impact analysis type? (Almost always cost-benefit)
- For each pillar (economic, social, environmental), three columns assessing:
 - IA toolkit pillar followed? - ‘all relevant impacts identified’; ‘some relevant impacts identified’; ‘no relevant impacts identified’.
 - *Clarification: this is a subjective judgement relying on the researchers’ expertise and best interpretation of the information in the IA. The list of questions under Q2 below provide guidance on the impacts that ought to be considered, and in practice the first parts of Q2 were addressed at the same time as the questions here. In one example, the researcher concluded that some impacts were missed, partly due to use of a ‘business as usual’ baseline instead of a ‘do nothing’ option, because the consequences of an end to transitional policy measures were overlooked. The IA was nonetheless deemed to*

be proportionate, despite the issues around impact identification, because the arguments made are valid and further analysis would not alter the outcome.

- Appraisal method - ‘mostly monetised’; ‘mostly quantified’; ‘mostly descriptive’; ‘mixed quantitative/monetary’; ‘mixed descriptive/quantitative/monetary’, or ‘n.a.’ if no impacts were identified.
- Appraisal rigour - ‘high’, ‘medium’, ‘low’, or ‘n.a.’ if no impacts were identified. Cases in which impacts were not identified, but should have been, are detected via Q2 below.
 - *Clarification: Again this is a subjective judgement. For example, for one IA with a marginal positive NPV the researcher concluded that all SD impacts had been identified in the IA, but that all require greater appraisal rigour, for the following reasons. The assessed economic benefits were the only monetised benefits, but there was concern that they might largely be a transfer of income between producers, rather than additional value for the UK; in addition, there was no consideration of possible multiplier effects in local economies. Positive social impacts for vulnerable communities was a driving rationale for intervention but deemed not proportionate to explore in any detail. Positive environmental impacts are a second major rationale for intervention but no evidence of this is included in benefits as ‘evidence is poor’. Negative environmental impacts associated with increased GHGs are described as ‘minimal’ but this is based on contradicting/weak information suggesting it could be proportionate to seek additional clarification.*
- Comments on appraisal rigour - any additional information that helps to explain the entries in the above columns.

Q2: Should the 3 Pillars have been accounted for at all, given the scale of potential costs/benefits of policy?

The IA toolkit provides an indicative (but not exhaustive) list of questions to address when considering potential impacts. These give us guidance on what to consider when determining whether proposals have impacts:

Economic / Financial

- How will proposals impact on the market and specifically consumers and businesses? In particular, consider the impacts on small and start-up businesses.
- If there are costs to business, i) do proposals include exemptions for micro businesses and ii) have any costs under One-in, One-out been offset?

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- Will all businesses be affected in the same way, or will there be some that benefit, while others bear costs?
- What are the expected impacts on the wider economy (e.g. labour market)? The market and specifically consumers and small businesses?
- What are the impacts on competition? Will the number or range of suppliers be limited? Will their ability to compete be limited or the incentive to compete vigorously be reduced?
- Will proposals impact on innovation e.g. new low carbon technologies?
- What are the expected financial and resource impacts on other Departments?

Social

- Will proposals have an impact on social, wellbeing or health inequalities?
- Will proposals influence safety at work or risk of accidents in the community?
- Will proposals affect the rate of crime or crime prevention or create a new offence/opportunity for crime?
- Will proposals affect the levels of skills and education?
- Will proposals affect provision of facilities or services that support community cohesion or in other ways that affect the quality of life in the local community?
- Will the impacts on rural areas be different to urban areas? Will there be specific regional or local effects?
- What are the impacts on human rights (right to life, liberty and security, a fair trial and prohibition of torture, slavery, forced labour)?
- Do the proposals impact on the responsibilities under the Equality Act 2010 i.e. do they impact on age, disability, gender reassignment, pregnancy and maternity, race, religion or belief, sex, sexual orientation?

Environmental

- Will proposals lead to change in the emission of Greenhouse Gases?
- Will proposals be vulnerable to the predicted effects of climate change?
- Will proposals lead to a change in the financial costs or environmental and health impacts of waste management?
- Will proposals impact significantly on air quality?
- Will proposals involve any material change to the appearance of the landscape or townscape?

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- Will proposals change the degree of water pollution, levels of abstraction of water, exposure to flood risk?
- Will proposals affect the number of people exposed to noise or the levels of exposure, or impact on the number of people suffering from nuisances on the streetscene?

The data recorded in this section included the following:

- For each pillar (economic, social, environmental), two columns assessing:
 - Impacts - are there likely to be relevant impacts? Yes, maybe or no.
 - Significance to welfare - high, medium, low, or none. The significance is assessed within the context of the policy area: not 'national level significance' but rather significance in the sense of being potentially material in the appraisal decision.
- Comments on sustainable development impacts - any additional information that helps to explain the entries in the above columns.
- Conclusion - our overall assessment drawing together the impacts appraised, the rigour applied and the likely significance of impacts. For the purposes of some further analysis comparing performance across different groups of IAs, we use an arbitrary but internally consistent scoring system identified in brackets.
 - Yes, all SD impacts identified and assessed appropriately (6 points)
 - Yes, some SD impacts missed BUT assessment is proportionate to costs/benefits (5 points)
 - No, all SD impacts identified BUT some require greater appraisal rigour (4 points)
 - No, all SD impacts identified BUT all require greater appraisal rigour (3 points)
 - No, some SD impacts missed (that a proportionate assessment would include) (3 points)
 - No, some SD impacts missed, some identified require greater appraisal rigour (2 points)
 - No, some SD impacts missed, all identified require greater appraisal rigour (1 point)
 - No, all SD impacts missed (0 points)
- Exemplar - is this IA a candidate for a case study example of good use of SD guidelines?

A2.2 Second stage database: deeper analysis of environmental appraisal

The second stage database uses the same coding system and basic information sheet as the first. The following sheets focus on environmental appraisal using two different frameworks, the “Wider Environmental Impacts” tests, and the “Ecosystem Services” as presented in the supplementary guidance.

Wider Environmental Impacts

The Wider Environmental Impacts sheets addresses the seven specific tests set out in the older Impact Assessment guidelines. These are:

1. Will the policy option be vulnerable to the predicted effects of climate change?
2. Will the policy option lead to a change in the financial costs or the environmental and health impacts of waste management?
3. Will the policy option impact significantly on air quality?
4. Will the policy option involve any material change to the appearance of the landscape or townscape?
5. Will the proposal change 1) the degree of water pollution, 2) levels of abstraction of water or 3) exposure to flood risk?
6. Will the policy option change 1) the amount or variety of living species, 2) the amount, variety or quality of ecosystems?
7. Will the policy option affect the number of people exposed to noise or the levels to which they're exposed?

Under each test, the sheet records how the topic is recorded in the appraisal, with the following headings:

- *Impact?* Would the policy have a significant impact under this category? Options are: High, Medium, Low or None.
- *Effort?* What is the appraisal effort devoted to this category? Options include: Full, Partial, Superficial or None.
- *Qualitative?* What qualitative description is given of impacts under this category?. Options are: Full detail, Main impacts, Partial, or Trivial/None.
- *Quantitative?* What part of the impacts are quantified? Options are: All, Half or more, Less than half, or None (using the reviewer’s best judgement as to what ‘all’ would mean).
- *Monetary?* What part of the impacts are monetised? Options are: All, Half or more, Less than half, or None.
- *Physical uncertainty?* How is the uncertainty regarding physical/ecological impacts treated? Options are: Detailed treatment, Basic treatment, or Not mentioned.
- *Value uncertainty?* How is the uncertainty regarding the value/cost to humans treated? Options are: Detailed treatment, Basic treatment, or Not mentioned.
- *Notes:* free text to explain further details.

Clearly there is some subjective judgement involved in making the above assessments, in particular regarding the significance of any possible impacts and the level of appraisal effort expended. The data recorded are the best judgements of the researchers, based on the evidence presented in the IA document and on their own knowledge of environmental policy and valuation.

Ecosystem Services

The Ecosystem Services sheet addresses the treatment of ecosystem service impacts, using the list of ecosystem services set out in the Supplementary Guidance, as follows:

- Provisioning services: Food; Fibre and Fuel; Genetic Resources; Biochemicals, natural medicines, pharmaceutical; Ornamental resources; Fresh water
- Regulating services: Air quality regulation; Climate regulation; Water regulation; Natural hazard regulation; Pest regulation; Disease regulation; Erosion regulation; Water purification and waste treatment; Pollination
- Cultural services: Cultural Heritage; Recreation and tourism; Aesthetic values
- Supporting services: Soil formation; Primary production; Nutrient cycling; Water cycling; Photosynthesis

For each service, the sheet records how the IA deals with the issue, with the following options:

- Monetary: the change in service is valued in monetary terms
- Measured: the change in service is quantified but not monetised
- Described: the service impacts are described in some detail
- Noted: the service impacts are mentioned, but only briefly
- Missing: there is no mention of an impact that could be deemed significant
- Insignificant: there is no mention, but this is proportionate for the case.

In practice most of the entries in the sheet are “insignificant”, because most policies only have significant impacts on a few of the ecosystem services listed. Again, there is an element of subjective judgement required from the researchers in determining whether or not a potential impact should be judged significant. Generally, we would err on the side of caution here in the sense that an impact that *might* be considered a possible outcome of a policy ought at least to be mentioned in the IA, even if this is only to explain briefly why it is not thought that in practice any such impact would arise.

A free text “Comment” column is used to record further detail on the treatment of ecosystem services.

Overall Summary

The final sheet in the database provides a short paragraph summarising the way in which each IA has tackled appraisal of environmental impacts.

A2.3 Interview protocol

The interview protocol was developed over several iterations with the research team and Defra. To answer the questions set out in the project specification, the interviews needed to address three main areas:

- To capture the ‘effectiveness’ of relevant environmental appraisal guidance and broader sustainability guidance as set out above: is it used appropriately, does it help ‘joined up thinking’ about sustainable development?
- To assess trends in accounting for sustainable development / environmental impacts; and
- To assess how the application of environmental appraisal and sustainability guidance makes a difference in policy terms. What is the practical impact of guidance: what would have taken place without it?

Interviews focused on interviewees’ experiences of appraisal and appraisal guidance. The original intention was that this should include, where appropriate, examination of paired-comparison of older and newer IAs carried out in similar areas, however in practice this was not feasible due to the time elapsed and changes in staff/roles.

The protocol set out a small number of questions under the following topics:

- General Questions
- Specific Cases
- Awareness of Guidance
- Use and Usefulness of Guidance
- Trends in Appraisal
- Practical Impact of Guidance

These were grouped under the following bands of importance:

- “Must Get” Information
- Should Discuss
- Could Probe

The interviews were semi-structured and did not seek to follow a set order of questions. In particular, the interviews were shaped by discussion of interviewees’ actual experiences with IAs and business cases. So the questions in the tables were treated as examples that illustrate the key areas to be covered, and were used by the interviewers as a checklist for topics to discuss and as direct questions where appropriate. They were not used as lists to work through systematically, particularly since much of the information was volunteered during initial discussions on the

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interviewees' experiences with IAs. For each interview, we prepared a summary of key points for comment/sign-off by interviewees.