

UK National Ecosystem Assessment Follow-on

**Shared, plural and cultural values:
A handbook for decision-makers**



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Shared, plural and cultural values of ecosystems: A handbook for decision-makers

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Preface

Catalyzed by the Millennium Ecosystem Assessment, the idea of seeing ecosystems as vital natural assets has spread across the world over the last decade. This idea appears in thinking about food, water, energy, health, fisheries, forestry, mining, cities, and the vast infrastructure supporting these and other sectors – and it increasingly appears in the ways local communities, corporations, governments, and other institutions frame decisions. Despite this rising awareness and energy, however, our planet remains besieged by massive degradation and mounting threats of catastrophic change.

The UK National Ecosystem Assessment (NEA) and its follow-on (NEAFO) are a bold initiative designed to embed the values of ecosystems into decisions at all levels. The Ecosystem Approach is about shining a light on the many intimate, yet often hidden connections between people and nature, such as in the provision of drinking water, crop pollination, hydropower, climate stability, and cognitive and emotional well-being. In shining a light, we can see the implications of alternative choices and development pathways more clearly, and thereby reach for better outcomes for both people and nature.

No one person or entity can possibly achieve the aims of the NEA alone. To bring about a deep and lasting transformation in the way people interact with one another and with nature, we must come together around a shared understanding, a shared vision for the future, and a shared approach for getting there. Views on such matters are strongly shaped by values, yet many types of value – such as for intimate friendships, health and security, or connections with nature – may not be easy to express, becoming clear only after talking together with others about what matters most in life.

The NEAFO research on shared, plural and cultural values offers a beautiful and insightful framework for eliciting such values in a meaningful way. Shared values are those that people hold together as members of communities (local or even global), and they point to something different and much more powerful than the sum of individual values. Their elicitation requires a range of innovative combinations of methods. These are introduced here, and go far beyond what are useful, but limiting, economic methods.

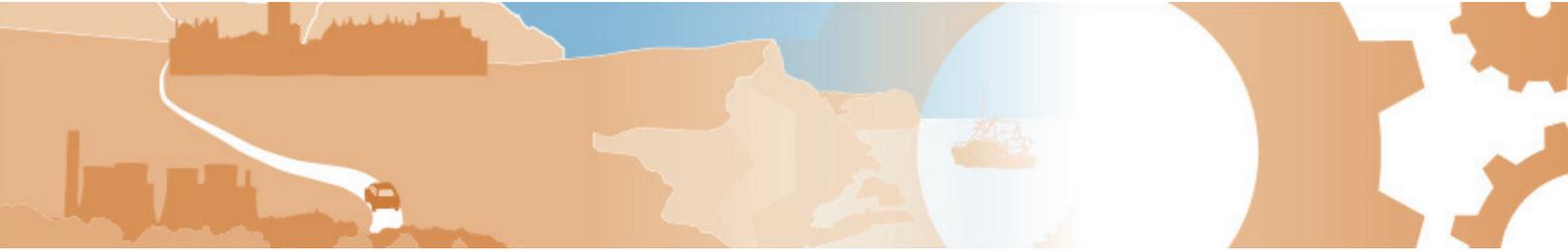
In assessing and cultivating shared values, we lay the necessary foundation for effective action. The UK is in a very creative, yet highly dispersed phase of innovation, in co-development of ecosystems knowledge and real-world implementation; indeed, this is true across the world. This handbook explores how we can recognize the plurality of values people hold in relation to ecosystems, and how the tremendous potential energy in communities might be channeled and magnified to greatly accelerate the transformation we seek.

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Contents

Preface.....	3
Contents.....	5
1 Introduction.....	6
1.1 What this handbook will do.....	7
<i>Box 1: The UK NEAFO.....</i>	8
2 Why do shared, plural and cultural values matter?.....	9
<i>Box 2: Understanding the value of potential marine protected areas.....</i>	11
<i>Box 3: Deliberating on the future of Hastings.....</i>	12
3 What are shared, plural and cultural values.....	13
4 Overview of methods for assessing shared values.....	16
5 Deliberation.....	24
6 How to consider shared, plural and cultural values in decisions.....	27
6.1 Using existing datasets to identify shared values.....	29
6.2 Risk management for a potentially contested environmental policy on the drawing board.....	32
6.3 Social desirability of a policy programme that might have significant environmental impacts.....	34
6.4 Management interventions related to land use change.....	35
6.5 Comparing the wellbeing that people derive from different potential protected areas.....	37
6.6 Project appraisal.....	38
6.7 Payments for Ecosystem Services schemes.....	41
7 Methods case studies	43
7.1 Inner Forth: Linking participatory mapping and deliberative monetary valuation.....	43
7.2 The value of potential UK marine protected areas.....	46
7.3 Hastings: Valuing the sea in a broader societal context.....	50
7.4 The coast in the media.....	55
7.5 Kinloch Rannoch, Forest Futures: Artistic engagement, interviews, deliberations and social learning to reveal hidden cultural values.....	56



1 Introduction

Shared values are those that bind people together, for example as citizens and as members of communities. Economics traditionally considers the values of individuals, but some of the values that people hold are not for themselves, but for others and the communities and society in which they live. These collective, shared values often relate to the landscapes people live in and visit. Many people experience emotional and spiritual connections to these places that are hard to express in monetary terms. This handbook aims to help decision-makers make more robust decisions, based on an appreciation of the shared values that people hold together and that are distinct from individual values. It focuses on shared, plural and cultural values around managing the natural environment. However, many of the concepts and applications could be adapted to other policy areas.

To be well-informed, equitable and transparent, the policies and decisions that we make need to take account of the views of the diversity of stakeholders that they may affect. People's views are strongly influenced by the values that they hold, which can be deeply held. However, not all of the ways that people value the world are necessarily pre-formed in their minds nor easily articulated, only becoming clear when people get together to discuss (or 'deliberate') what matters to them. Taking these values into account early on in the decision-making process can help make more robust decisions that are more likely to be accepted by society.

People express different types of values. These range from how valuable something is to them ('contextual values'), to deeper held 'transcendental' values that include principles such as honesty and fairness plus the wide range of things people might strive for, from harmony with nature and meaningful friendships to wealth and social status. These values are often shared by communities (including 'communities of practice', such as groups of users of the environment), cultures and society at large ('communal' and

'cultural' values). People may express different values depending on whether they are asked as an individual householder or a member of their local community or interest group, or as a consumer versus a citizen, and depending on how they are asked (e.g. through an individual survey or through deliberation with others).

New approaches are needed for identifying and taking account of these often hidden, yet strongly held, shared values. Traditional (e)valuation often fails to reach out to these values. This is because it tends to assume that the opinions people express as individuals tap into all forms of value, and that adding up different people's values represents the sum total of values held by a constituency of people. Values are 'plural'. Not all types of values can be boiled down to a single value, be that in money terms or expressed in other ways. This is because different types and dimensions of values are not directly comparable



(they might be 'incommensurable'). Rather, to elicit these shared, plural and cultural values, it is often necessary to use a mix of monetary, non-monetary and hybrid approaches to include the fullest possible range of value systems necessary to inform more robust, inclusive and far-sighted decision-making. Often such a mix will include deliberation, to make explicit and learn about the values held by different groups in society, so that these can be incorporated in decisions. The UK National Ecosystem Assessment follow on (NEAFO) found clear evidence of how deliberative



and mixed-method approaches were able to elicit more inclusive suite of values than conventional approaches, finding evidence of clear differences between individual and shared values across several empirical studies .

This does not mean decision-makers necessarily have to add a whole new separate set of procedures to what they already do. Rather, this handbook focuses on methods that can be integrated into existing decision-making processes, so that what is already being done can be done better.

It is ultimately a judgement call to consider when shared values should be considered explicitly in decision-making. However, as a general rule, there is particular added value to taking a shared values approach in the following cases:

- where issues or ecosystem services under consideration are complex;
- where there is a lot of uncertainty;
- where values are likely to be subtle and implicit;
- where issues or evidence are contested;
- where there are a large number of different stakeholders.

1.1 What this handbook will do

This document provides suggestions for decision makers on when and how shared values can be taken into account in their decision making, providing practical information and examples of how this can be done. It discusses the use of both existing methods that are likely to be familiar to many decision-makers (e.g. from the Green Book and Magenta Book) and new approaches. It also shows ways in which multiple tools and methods can be used together in specific policy venues and contexts. By combining methods in this way, we hope to show how readers might combine these with their own methods and procedures to integrate shared values into their decision-

making processes. Suggestions are based on theory, literature review and empirical evidence collected as part of the UK NEAFO (**Box 1**), and are not intended to be prescriptive. Also, this handbook does not claim to review all possible methods for assessing shared, plural and cultural values in relation to ecosystems, and new methods are continually being developed. Finally, the handbook has been created within the context of UK decision-making processes, and may need to be adapted before being used in a different cultural context.

There are seven sections to this handbook. Following this introduction, Section 2 discusses why shared values are important to business, national and local government, policy analysts, land managers, NGOs, and community and activist groups. Section 3 provides a brief introduction to the various types of shared values. Section 4 introduces key methods in a tabular overview with their main advantages and disadvantages and links to further NEAFO resources and case studies. Section 5 describes key aspects of deliberation, which is an important element in many approaches to assessing shared values. Section 6 gives a series of examples of assessing shared, cultural and plural values in a wide range of contexts, and also includes an overview of existing data sets. Section 7 provides five case studies illustrating the application of these methods in real-world decision-making contexts.

Take home messages

- Shared values are those that people hold together as members of communities, from local to global scales. The UK NEAFO has shown that they can be clearly distinguished from individual values.
- Values are plural. Not all types of values can be boiled down to a single value, be that economic or expressed in other ways. This is because different value systems are 'incommensurable'; they are not directly comparable.
- The values that people express when asked as individuals in conventional consultation or valuation are a subset of their values. They



are unlikely to represent all of their deeply-held values and beliefs, including those that they hold collectively with other people. It is often necessary to undertake some form of deliberative process to reveal these deeper values, so that they can be incorporated in decisions.

- Taking a shared values approach is particularly important when dealing with uncertainty and complexity, where values are likely to be subtle and implicit, contested issues and issues with large numbers of different stakeholders.
- Different methods are suitable for eliciting different types of values. A comprehensive assessment requires a mixed-method approach that combines different approaches to account for these different types of values.
- If decision-makers take account of this diversity of values, decisions are likely to be more representative of the values of those that they affect, and may also be less contested.

Box 1: UK NEAFO

Published in 2011, the National Ecosystem Assessment (NEA) was the first comprehensive analysis of the state of the UK's natural environment in terms of the benefits it provides to society. This handbook is based on the findings of research conducted as Work Package 6 part of the UK NEA Follow-on (NEAFO): Shared, Plural and Cultural Values. The project was conducted between 2012-14 and brought together 21 researchers (ranging from ecologists and economists to researchers from philosophy, divinity and media studies) with decision-makers from the policy and NGO community. The research combined literature review with new empirical research to explore the different types of values that typically feed into decision-making processes, from values held by individuals to shared values, and from preferences and financial values to deeper held values and beliefs. Case study research compared monetary and non-monetary valuation, and explored the role of deliberation in helping people form, express and shape their values. In addition, this handbook also reflects some of the methodological material on participatory mapping and interpretive methods from NEAFO Work Package 5: Cultural Services. To find out more about the research that this handbook is based upon, visit: www.lwec.org.uk/sharedvalues.



2 Why do shared, plural and cultural values matter?

For **business**, brand and reputation are very important. Knowing what people want, and what upsets people, really matters. From historic revelations about child and indentured labour and poor social and environmental practices along supply chains, businesses know that they are under constant scrutiny and that the rewards of being in accord with customer and broader societal values really matter. This report highlights the fact that customers and shareholders may have deeply-held shared and cultural values, which can emerge in response to business decisions. Attaining a clearer understanding of these values might help avoid risks (such as the public outcry seen when child labour practices were exposed along supply chains producing goods for major sportswear brands) or provide opportunities (such as Disney's 'Magic of Healthy Living' initiative, which attracted an audience of 85 million people¹). Engaging in shared value deliberations with stakeholders on how to implement new plans or projects can increase buy-in and reduce conflict, and can result in environmental policies that are more aligned to peoples' values. Finally, businesses exert significant effort to develop their own internal shared values to enhance work place well-being and productivity.

National government and its agencies want to understand the social impacts of future policies and how they are likely to be perceived by the public. A range of market-based and non-market economic methods may be used to provide an evidence base or to understand these issues, but these methods rarely capture the shared values and meanings held by groups of people. Policies impact upon communities as well as individuals, so understanding that shared values can often differ from aggregated individual values is crucial in considering their full impact. For example, in

a consideration of the values of potential marine protected areas (MPAs), UK NEAFO research found that shared values were more considered and confident and better reflected deeper held ethical and emotional values that people felt in relation to potential MPA locations (**Box 2**). Utilising methods that elicit these shared values as an integral part of policy development will provide a greater understanding of the potential public response, and can help anticipate when proposals are contested.

Local government often requires recognition that communities hold a plurality of values. Focusing just on individual and economic values can limit the validity of consultation, especially if these views are dominated by the most articulate, affluent, or politically powerful voices. Understanding shared social values through cross-community deliberation can bring to the surface a richness of views that can then inform more beneficial, well-accepted decisions. Understanding shared values is an important aspect of enhancing this richness, and for averting costly objections to non-inclusive decisions. In particular, understanding shared values early on in the

“Understanding that shared values can often differ from aggregated individual values is crucial in considering their full impact”

decision-making process can help to allocate resources to resolve points of likely conflict. For example, UK NEAFO research on strategic sustainable development in Hastings with a wide group of stakeholders showed that a well-designed process can help to build the trust needed to develop policy options that can find

synergies between environmental and social priorities, bridging different interests (**Box 3**).

Policy analysts and consultancies have increasingly mastered methods to include the environment in decision support tools such as cost

¹<http://www.prnewsonline.com/topics/corporate-responsibility/2013/02/11/2013-csr-awards-social-good/>



benefit analysis and impact assessments. However, deliberative and mixed method approaches are increasingly advocated as a more comprehensive way to account for the value of ecosystems to human well-being and there is likely to be increasing demand for their use.

It is important for **research funders** to have an appreciation of shared values, so that their research priorities reflect social as well as economic and environmental priorities, and commissioned research resonates and connects with the values that underpin decisions in policy and practice. An appreciation of shared, cultural and plural values helps provide evidence about the social impacts of policy decisions in addition to economic and environmental impacts. Methods for assessing shared values originate in a wide variety of fields and disciplines. Further testing and development of mixed method approaches provides an avenue to support better integration of evidence from natural, social and economic sciences and arts and humanities around environmental issues.

Land managers such as farmers, foresters and estate managers will also benefit from understanding the shared values that different groups of people hold for particular places. Land is valued by many different groups in society for different reasons, and these values may only

become apparent once decisions have been taken that provoke public outcry. An appreciation of shared values can enable those who own and manage land to anticipate, understand and account for the values of different groups in society in their land use and management decisions, reducing the likelihood that decisions (for example about public access routes or decisions to plant trees or biofuel crops) will be challenged in court or that planning permission will be delayed or withheld.

Shared values are also important for **NGOs and community and activist groups**. These groups often have close connections to local communities, community values and interests. Understanding the shared values that matter to these groups can help these organisations manage their assets and communicate their key messages more effectively. Linking core objectives to deeply held values can increase the support that NGOs, and community and activist groups receive, and strengthen their membership base. They also have an opportunity to benefit from more deliberative approaches to appraisal, consultation and decision-making that are associated with assessment of shared values. Shared values also allow communities to take direct practical action in the collective interest (e.g. local groups taking action on invasive species or the development of community renewable energy initiatives).

Box 2: Understanding the value of potential marine protected areas

The Westminster and UK Devolved Administrations committed to protect marine biodiversity and ecosystem services by establishing a network of marine protected areas (MPAs). However, little is known about how user groups such as divers and sea anglers value the locations proposed as MPAs. The UK NEAFO investigated the shared and cultural values of these groups using a combination of deliberative monetary valuation (DMV), multi-criteria analysis (MCA), non-monetary well-being indicators, and storytelling. The research provided a rich understanding of why different places were important in particular ways, such as in the excitement that people feel when they see a creature they've never seen before, the bond that people develop when they go out together or the peacefulness that they feel when they are alone with the immensity of the sea. In comparing individual values elicited through an online survey with shared values elicited through group-based deliberation, shared values better reflected these emotional connections and appeared more confident and considered. This case study is discussed in more detail in Section 7.2.





Box 3: Deliberating on the future of Hastings

When people come together to determine what is important to them, they can be empowered, inspired and emboldened to take strategic action. In the UK NEAFO Hastings case study, a wide range of different stakeholders came together in three in-depth workshops to discuss what Hastings might look like in 2030, and the relative importance of ecosystem services vis-à-vis other societal priorities. Through a ‘values compass’ and storytelling, the process first explored deeper held, overarching principles and life goals that people held as individuals and shared as a community, and how participants related to the local natural environment. This was followed by an analysis of the strengths, weaknesses, threats and opportunities to Hastings in environmental, cultural, social and economic terms, through which 10 communal goals were established. This was followed by a beach walk, visioning and a multi-criteria evaluation of different visions. The process was completed with a DMV exercise where social willingness to pay was established for different strategic response options to achieve sustainable development. The process led to substantial learning and building bridges between different interests, and illustrated how ecosystem services could be integrated into discussion of broader societal concerns. This case study is discussed in more detail in Section 7.3.



3 What are shared, plural and cultural values?

The term 'shared values' has been used to indicate a wide variety of different things in the literature. The NEAFO developed a theoretical framework and typology that discriminates values along five dimensions: the concept of value; the value provider; the intention of value; its scale; and the process used to elicit values (Figure 2). Emerging from these dimensions, seven different, non-mutually exclusive types of shared values can be identified

1. **Transcendental values** are the principles and overarching goals that guide us, going beyond or transcending specific situations. Transcendental values are a deeper held type of value; they are often shared within communities or within society and thus termed as shared values. They can be 'positive' or 'negative', and include both ethical and non-ethical values; examples include wealth, social status, honesty, fairness, enjoying life, harmony with nature, discipline, peace, politeness and security.
2. **Cultural or societal values** are culturally shared principles and virtues, as well as a shared sense of what is worthwhile and meaningful. Societal values are the cultural values of a society; of course societies are diverse, so there may be many sets of cultural values in one society that overlap to a greater or lesser degree with each other.
3. **Communal values** are values held in common by members of a community (e.g. geographic, faith or belief-based or activity-based communities).
4. **Group values** are the values expressed by an ad-hoc group of people (e.g. in a valuation workshop), through consensus or majority vote, or more informally.
5. **Deliberated values** are the values that individuals or groups express as a result of deliberating with one another, typically involving discussion and learning.

6. **Other-regarding values** express the sense of importance attached to the well-being or moral standing of others (whether they are human or non-human).
7. **Value to society** is the benefit, worth or importance of something to society as a whole.

Taken together, these different types of shared values (sometimes also referred to as 'social' or 'shared social' values) represents the values that we come to hold and assign through our interactions with others in one way or another. It is these values that inform and shape narratives of our 'common good'.

Within this values framework, there are some further value types that are not necessarily a type of shared value, but that are important to define. We contrast transcendental values with **contextual values**, which are context-dependent. For example, one might value peacefulness (transcendental) and also value the Scottish Highlands (contextual), perhaps because one might experience them as a peaceful place. Beyond transcendental and contextual values, there are value indicators, including monetary values.

Cultural, societal, communal and group values can all be contrasted with individual values, deliberated with non-deliberated values, and value to society with value to the individual.

Thus, as we have seen, there are many types of values. The term **plural values** relates to the notion that these cannot all be measured using a single yardstick (such as money), so more than one method typically needs to be used to be able to assess values fully.

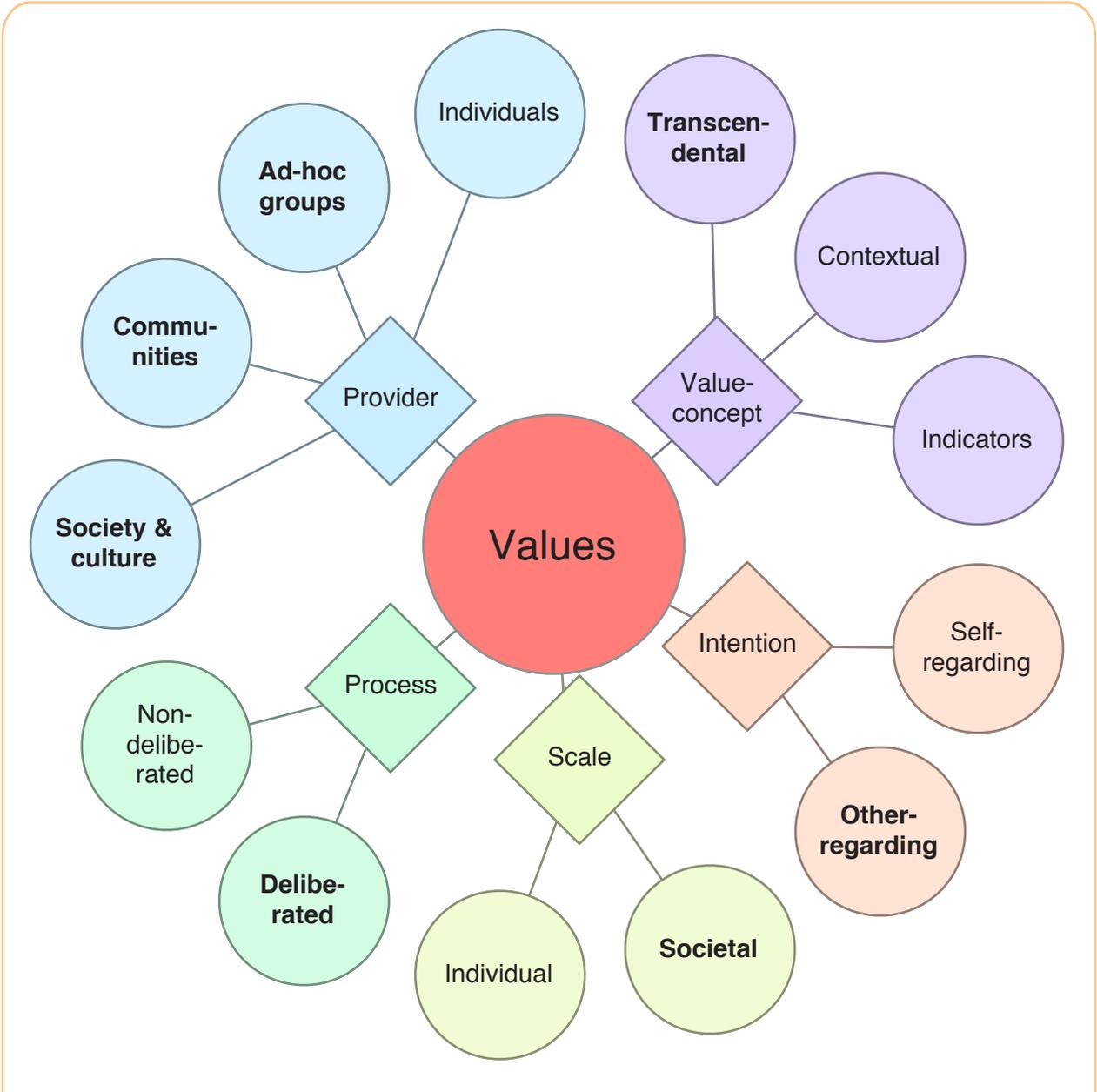


Figure 2. The five dimensions and seven main types of shared values. Dimensions are depicted as diamonds. On the basis of these five dimensions, we can differentiate between seven main, non-mutually exclusive types of values that might be termed shared, social, or shared social values (circles with bold text); and other types of values (other circles). For example, provider is a dimension that indicates who may provide values in a valuation setting; societies, cultures, communities and ad-hoc groups provide societal, cultural, communal and group values, which are all distinct types of shared values.



4 Overview of methods for assessing shared values

The table on the next pages provides an overview of a selection of key methods for assessing shared, plural and cultural values, with their suitability for assessing different types of values at different spatial scales, their relative requirements in terms of resources and time scales, and links to relevant UK NEAFO work packages or other sources of further information.

Technique		Description	Types of shared values that may be elicited	Spatial scale	Resources required	Timescale	Example or further info
Deliberative	In-depth discussion groups	Group (usually 4 – 8 people) discussions (often repeated), during which participants shape the terms of discussion, develop themes in ways relevant to their own needs and priorities*.	<p><i>Process:</i> Cultural/societal, communal, transcendental, group, deliberated, other-regarding, values in relation to society.</p> <p><i>Outcome:</i> Deliberated group or individual, transcendental and/or contextual values.</p>	Any, mostly used locally/regionally	Low (local scale) to high (national scale) – In contrast to some other deliberative methods there is no set structure, thus process and outcomes are uncertain and highly dependent on the quality of facilitation.	Short to medium - Highly flexible though dependent on number of groups and iterations.	Clark, J., Burgess, J. & Harrison, C.M. (2000) I struggled with this money business: respondents' perspectives on contingent valuation. <i>Ecological Economics</i> , 33, 45–62.
	Citizens' juries	A small cross section of the general public who come to a considered judgement about a stated policy issue/ problem through detailed exposure to and scrutiny of the relevant evidence base. The group responds by providing a recommendation or 'verdict'. Proceedings are generally not publically accessible. Where they are, they are commonly termed consensus conferences*.	<p><i>Process:</i> Cultural/societal, communal, transcendental, other-regarding, values in relation to society.</p> <p><i>Outcome:</i> Deliberated group contextual values (verdict).</p>	Any	Low to medium - Quality depends on availability of evidence and witnesses (which may drive up cost).	Medium - Depending on complexity of issue, an iterative approach may be required.	Carson, L. (2003). <i>Consult Your Community: a Handbook</i> . www.activedemocracy.net/articles/cj_handbook.pdf

Technique		Description	Types of shared values that may be elicited	Spatial scale	Resources required	Timescale	Example or further info
Deliberative	Deliberative opinion poll	Technique designed to observe the evolution of the views of a large citizen test group as they learn about a topic. Typically the group votes on the issues before and after an extended debate*.	<p><i>Process:</i> Cultural/societal, communal, transcendental, group, deliberated, other-regarding, values in relation to society.</p> <p><i>Outcome:</i> Deliberated individual indicators (vote counts).</p>	Any	Medium to high - Mobilising large sample may require considerable effort. Large-scale application can be facilitated through digital resources.	Medium to long - Mobilising large sample may require considerable effort/time	Fishkin, J. (2009) <i>When the People Speak: Deliberative Democracy and Public Consultation</i> . Oxford University Press.
Analytical-deliberative	Participatory modelling	The involvement of stakeholders in the design and content of analytical models that represent ES and their benefits under different spatial and temporal conditions*.	<p><i>Process:</i> Cultural/societal and communal contextual values. Other-regarding and transcendental values only likely to be made explicit if prompted through reflection/deliberation process.</p> <p><i>Outcome:</i> Deliberated group contextual values and indicators (relative importance of different parameters and their relationships).</p>	Any, system bounds can be established either spatially or contextually.	Low to high, depending on complexity of model, whether models are conceptual or also quantitative and computer based. Complex processes require elaborate facilitation.	Short to long, depending on complexity.	NEAFO WP6 (Forth and Hastings case studies)

Technique		Description	Types of shared values that may be elicited	Spatial scale	Resources required	Timescale	Example or further info
Analytical-deliberative	Deliberative monetary valuation	<p>Techniques that use formal methods of group deliberation to come to a decision on monetary values for environmental change*.</p> <p>May be allied to survey-based techniques (CV or CEs) or use a non-econometric approach to establish values (e.g. incorporating citizen's juries).</p>	<p><i>Process:</i> Cultural/societal and communal contextual values. Other-regarding and transcendental values only likely to be made explicit if prompted through reflection/deliberation process.</p> <p><i>Outcome:</i> Deliberated and/or group indicators (Deliberated individual or group WTP, deliberated individual or group fair price, Deliberated individual or group social WTP).</p>	Any	<p>Econometric DMV requires the advanced quantitative and survey design skills needed for applying CV or CEs, plus facilitation skills. They also require a substantial sample size. Large-scale DMV can be costly though is potentially more efficient for valuation of complex goods, than a conventional individual interview approach. Non-econometric approaches do not require statistical expertise or large samples but do require substantial facilitation and process design skills.</p>	<p>conometric approaches - medium to long, dependent on sample size.</p> <p>Non-econometric: short to medium - dependent on complexity.</p>	<p>NEAFO WP6 (Forth and MPAs case studies)</p> <p>NEAFO WP10: NEAT tree (click for link)</p>
	Deliberative multi-criteria analysis	<p>Techniques that involve groups of stakeholders designing formal criteria against which to judge the non-monetary and (sometimes) monetary costs and benefits of different management options as the basis for making a decision*.</p>	<p><i>Process:</i> Cultural/societal and communal contextual values. Other-regarding and transcendental values only likely to be made explicit if prompted through reflection/deliberation process.</p> <p><i>Outcome:</i> Deliberated contextual individual or group values and indicators (ratings/rankings/scores).</p>	Any	<p>Low to medium - MCA processes can range from simple to complex, and thus facilitation, design and statistical expertise required varies. Sample size requirements lower less than those of econometric DMV.</p>	<p>Short to medium - dependent on complexity</p>	<p>NEAFO WP6 (MPAs and Hastings case studies)</p> <p>NEAFO WP10: NEAT tree (click for link)</p>

Technique		Description	Types of shared values that may be elicited	Spatial scale	Resources required	Timescale	Example or further info
Interpretive, potentially deliberative	Participatory mapping/GIS	A group of stakeholders consider or create a physical or digital map to indicate landscape features that are valuable (and/or problematic). Participants may also rate or rank these features for importance. Map layers can also incorporate photo, video, artwork, poetry, etc.	<p><i>Process:</i> Communal contextual values, if features are important/assessed on a larger scale: contextual cultural/societal values.</p> <p><i>Outcome:</i> As above. If features are deliberated and decided upon or rated/ranked by groups, these take the form of deliberated group contextual values and indicators.</p>	Any, so far used mostly locally/regionally.	Low to medium – depending on the complexity of number of workshops needed and the GIS. Resources needed increase with scale.	Short to medium – increases with scale and complexity.	<p>NEAFO WP5 (North Devon and Forth case studies)</p> <p>NEAFO WP10: NEAT tree (click for link)</p>
	Storytelling	Participants are asked to tell stories about their experiences of or in relation to places. These may be reflected upon in a group setting to discuss values related to these experiences.	<p><i>Process:</i> Communal contextual values, if features are important/assessed on a larger scale: contextual cultural/societal values. Other-regarding and transcendental values only likely to be made explicit if prompted through reflection/deliberation process.</p> <p><i>Outcome:</i> As process. If stories are deliberated in a group setting, these may take the form of deliberated group values. Number of times particular themes or values are expressed can provide indicators.</p>	Any	Low to medium – depending on transcription requirements and complexity of coding.	Short to medium – depending on number of individuals/groups.	NEAFO WP6 (Forth, MPAs and Hastings case studies)

Technique		Description	Types of shared values that may be elicited	Spatial scale	Resources required	Timescale	Example or further info
Interpretive, potentially deliberative	Interviews	Participants are interviewed about their values, beliefs and preferences. Group interviews allow for deliberation and are similar to in-depth discussion groups. However, in group interviews, terms are set by the interviewer rather than the group	<i>Process and outcome:</i> as storytelling.	Any	Low to medium – depending on transcription requirements and complexity of coding.	Short to medium – depending on number of individuals/groups.	Bryman, A. (2001). Social Research Methods. Oxford, Oxford University Press.
Interpretive	Media analysis	Use of a range of textual analysis tools (particularly content, frame and discourse analysis) on (mass) media outputs and social media content over a selected period of time.	<i>Process:</i> n/a. <i>Outcome:</i> transcendental, communal, societal and cultural values, other-regarding-values.	Any	Low to medium. Media analysis can be a cost-effective and relatively rapid approach for large-scale assessments for assessment of societal and cultural values.		NEAFO WP6 (Coast in the media case study)

Technique		Description	Types of shared values that may be elicited	Spatial scale	Resources required	Timescale	Example or further info
Interpretive	Desk-based cultural history study	This approach can be used effectively as a first option to quickly scan existing literature over a specified period of time to identify values connected with the decision being considered. The study can cover academic and grey literature, as well as creative writing (prose and poetry). Historical analysis can deliver understanding of past value and belief conflicts that can help to better manage present issues and mitigate risks.	<i>Process:</i> n/a <i>Outcome:</i> transcendental, communal, societal and cultural values, other-regarding-values	Any	Low to medium, depending on depth of investigation.	Short to medium, depending on depth of investigation	Robertson, I. & Richards, P. (2003) <i>Studying Cultural Landscapes</i> . Arnold, London.
	Other interpretive methods	A wide range of qualitative techniques including ethnography and participant observation, genealogy, life history methods, dramaturgical analysis, reviewing landscape character descriptions, other textual analysis of various sorts including discourse, content and frame analysis. content and frame analysis.	<i>Process:</i> n/a. <i>Outcome:</i> Variable, can be particularly suited to transcendental, communal, societal and cultural values. may take the form of deliberated group values. Number of times particular themes or values are expressed can provide indicators.	Variable	Variable	Short to medium (textual analysis, life history methods), long (ethnography), variable (others).	NEAFO <i>Report on arts and humanities perspectives on cultural ecosystem services</i> .

Technique		Description	Types of shared and social values that may be elicited	Spatial scale	Resources required	Timescale	Example or further info
Psychometric deliberative	Values compass	This method asks participants to consider which of their individual transcendental values are most important by ranking or rating them, and then asks to discuss the degree to which these values are important for one's community, culture or society. Values can also be ranked or rated on a group basis.	<p><i>Process:</i> transcendental individual, communal, cultural and/or societal values.</p> <p><i>Outcome:</i> As process, plus group and deliberated values. ranked or rated on a group basis.</p>	n/a	Low	Short	NEAFO WP6 (MPAs and Hastings case studies)
Psychometric	Subjective well-being indicators	These can be used to assess how and the degree to which places contribute to one's well-being, and are thus highly suitable for assessing the value of cultural ecosystem services using a quantitative non-monetary metric.	<p><i>Process:</i> n/a</p> <p><i>Outcome:</i> communal, societal and cultural contextual values.</p>	Any, highly suitable for large-scale assessments, though there is a need for standardised scales.	Medium - statistical expertise and sample size requirements. Establishment of new instruments is complex and time consuming. Using proven instruments can be relatively inexpensive and rapid.	Short to medium, dependent on complexity and sample size.	NEAFO WP6 (MPAs case study)

Technique		Description	Types of shared and social values that may be elicited	Spatial scale	Resources required	Timescale	Example or further info
Psychometric	Other psychometric	Psychometric testing refers to the measurement of psychological phenomena and processes, e.g. knowledge, experience, attitudes, values, worldviews. Psychometric models (e.g. Values-Beliefs-Norms, Theory of Planned Behaviour) can be used to better understand the impact of deliberative processes on values.	<p><i>Outcome:</i> standard scales exist for transcendental values, and can be developed on a case-by-case basis for contextual communal, cultural and social values. Statistical models can be used to relate psychometric variables (e.g. transcendental values) to contextual values and indicators such as WTP.</p> <p><i>Process:</i> n/ato Embed an Ecosystems Approach into Decision Making. DEFRA, London.</p>	Any	Idem	Idem	NEAFO WP6 (Forth and MPAs case studies)

Descriptions marked * were adapted from Fish, R. et al. 2011. Participatory and Deliberative Techniques to Embed an Ecosystems Approach into Decision Making. DEFRA, London.



5 Deliberation

Deliberation with different groups within society is important for identifying shared, plural and cultural values, and there are many published guides available for selecting and engaging stakeholders effectively in well designed and facilitated processes (for example, see the Engagement Tools section of the National Ecosystem Assessment Tool (NEAT) tree developed by UK NEAFO Work Package 10). Deliberation occurs when people search for information and gain knowledge to form reasoned opinions that they can express in reasoned dialogue with others, to identify or evaluate options and then apply insights from the deliberation to determine well informed contextual values and preferences in relation to these options. Deliberation also enables different groups of people within society to learn from one another through their interactions with each other (this is sometimes termed 'social learning'). Broadly speaking, there are two types of deliberative methods: 'deliberative' techniques enable participants to exchange and consider evidence together and negotiate; and 'analytical-deliberative' techniques are more structured, integrating deliberation with analytical tools such as in deliberative monetary valuation (DMV).

Usually, deliberation and social learning involves interactions between people with different transcendental and contextual values. Often, the deliberation process will work towards agreeing on contextual values and/or value indicators (e.g. an agreed willingness to pay or an agreed ranking of management options) by consensus or majority vote. This may involve discussion of information and beliefs, exchange and debate of transcendental values and how they relate to the context, and negotiation. Thus, through the deliberation process, participants can both express their transcendental values and form their contextual values. In UK NEAFO case studies, participants often felt more confident about deliberated group values than non-deliberated, individual values. Participants also felt more comfortable about these values being used by decision-makers rather than the values they had

previously expressed as individuals. However, often the value of deliberation is not (or not just) in sharing values and reaching consensus, but also in appreciating the reasons behind other people's values, helping people to be able to 'live with' decisions that emerge from the process, whether they agree with the outcome or not.

In short-term workshop settings, potential changes in values will most likely to take place at the level of contextual values and preferences, rather than transcendental values. The extent to which deliberation or social learning leads to greater sharing of values especially depends on:

1. **The diversity of initial values** in the group (if everyone in the group has quite similar values, it may be easier to discover or reach shared values, but there is less scope for changes in values to occur as a result of deliberation);
2. **How effectively values are made explicit** in the deliberation (this may be easier for some participants to do than others);
3. **How effectively the process is designed and facilitated** (in particular to make values explicit and to manage power dynamics);
4. **The length of time** over which deliberation occurs.

Deliberation may be used at various points in decision-making processes, for example:

- **exploratory phase:** understanding the sorts of challenges stakeholders are facing that the decision might be able to address; scoping the objectives and approach to
- **evidence collection and analysis:** it may be useful to gather evidence with stakeholders through deliberation to elicit shared values, appraise options and better understand attitudes, perceptions and likely reactions to potential decisions among different groups;
- **interpretation of evidence:** whether evidence comes from stakeholders or other sources, it may be useful to engage stakeholders in the interpretation of evidence, making links and contributions to issues that might otherwise have been overlooked.

There are a number of mechanisms that can be used to facilitate deliberation. Broadly these can be categorized as methods for:

Opening up dialogue and gathering information with stakeholders about issues linked to the decision, for example:

- **brainstorming** (getting participants to think rapidly and express ideas in short phrases to come up with new and creative ideas);
- **metaplan** (participants are given a number of post-it notes, asked to write one idea per post-it and place it on the wall, grouped next to ideas that sound similar, so ideas cluster);
- **listing techniques** such as a **carousel** where questions are arranged in stations around the room and groups move round stations, each group with a different coloured pen, at timed intervals, until they arrive back at their starting station and can read what other groups added to their initial ideas.





Exploring issues in greater depth with participants, for example:

- **mind-mapping**[®] techniques (also known as concept mapping, spray, spaghetti and spider diagrams) can be a useful way to quickly capture and link ideas with stakeholders;
- **SWOT analysis** encourages people to think systematically about the strengths, weaknesses, opportunities and threats as they pertain to the decision;
- for issues that have a strong temporal dimension or for project planning with stakeholders, **timelines** can be used to help structure discussion in relation to historical or planned/hoped for future events.

Closing down options and deciding on actions, for example:

- **ranking** can be used to place ideas in rank order. Getting consensus amongst participants for a particular ranking can be challenging, but the discussions it stimulates may be revealing;
- **prioritisation** differs from ranking by enabling participants to express the strength of their feeling towards a particular option rather than simply ranking an idea as better or worse than another idea e.g. by assigning sticky dots or stones (if working outside) to different ideas or options;
- **establishing a verdict** is a qualitative way of appraising or choosing a preferred option;

- **willingness to pay** (WTP) to achieve a certain outcome or for putting a policy or a form of management into place (e.g. establishing a protected area) can be deliberated at the individual scale (what an individual is WTP), or as a **'fair price'** (what is a fair price to pay for a member of the public or a certain group or community) or as **social WTP** (how much should society/government pay). The advantage of using money amounts is that the relative importance of different things can be easily and pragmatically compared;
- **multi-criteria (decision) analysis** combines ratings across different dimensions of value (the criteria). It allows economic, social and environmental criteria, including competing priorities, to be systematically evaluated by groups of people.

Many of these techniques will be described in some more detail in the examples and case studies in the following sections.

Working with a professional facilitator is particularly important in complex and/or contested decisions. However, in any decision-making process good facilitation can increase the efficiency of the process, ensure everyone has a fair say, balance power dynamics, increase learning and enjoyment and generally help get the most out of it for everyone involved.

A more detailed discussion of deliberation and social learning can be found in UK NEAFO WP6, Sections 2.4.3 and 3.5.

“Establishing a verdict is a qualitative way of appraising or choosing a preferred option”



6 How to consider shared, plural and cultural values in decisions

This part of the handbook provides eight short sections that illustrate how shared values can be considered in decision-making. These sections are designed to provide examples of methods that can be used to elicit and assess shared values, and how different methods might be combined. It is not intended to be prescriptive or exhaustive; rather it should be seen as a starting point for choosing and combining methods that might suit a particular decision-making context. For example, deliberative techniques may not be appropriate for decision-making processes where there are very limited options for participants to influence outcomes. Some methods are more likely to be used at the outset to assess shared values in order to better understand the decision-making context, for example media analysis or in-depth discussion groups. Other methods are more likely to involve shared values to analyse options and evaluate (potential) decisions, for example deliberative multi-criteria decision analysis or citizen's juries (**Table 1**). Some methods are more time and resource intensive than others, for example a quick and inexpensive desk-based cultural historical study versus a time-consuming and expensive series of in-depth discussion groups using visualisations.

The first section provides an overview of existing UK datasets for shared and cultural values. The remaining seven provide examples of the

combined use of various monetary and non-monetary methods to acquire new data. Below the title of those sections, bullet points indicate key methods used. The outlined approaches are intended as templates that give an indication of possible approaches with selections of methods that can work well in tandem, but can be customised and combined to fit a wide range of real-world situations. Also, the approaches described for particular policy context exemplars can often be transferred to others, e.g. some of the project appraisal tools can be used for policy appraisal and vice-versa, and elements of the approach outlined for a Payments for Ecosystem Services context could be adapted for a land-use planning context. The hypothetical examples developed here are grounded in a review of what methods have been used to assess shared, plural and cultural values in a wide range of contexts (WP6 technical report, Sections 2.2.2 to 2.2.4, 2.5), a synthetic discussion of what types of methods are suitable for assessing particular types of values (WP6 technical report, Section 3.6) and case studies based on new research (Section 7 and WP6 technical report, Section 4). These examples can of course not cover all the potential methods available; additional methods were listed in Section 4. A number of other relevant tools and methods have also been reviewed in UK NEAFO WP10 NEAT Tree:

<http://neat.ecosystemsknowledge.net>



Table 1. Methods and stages of the policy cycle.

Stage of policy cycle	Potential tools/methods
Ideas	Visioning Storytelling
Survey	Deliberative monetary valuation Participatory mapping/GIS Psychometric subjective wellbeing indicators Psychological values and beliefs surveys Values compass (Social) media analysis Desk-based cultural history study Storytelling Interviews In-depth discussion groups Deliberative opinion polls Review landscape character descriptions Existing quantitative datasets
Assess	Deliberative monetary valuation Deliberative multi-criteria analysis Citizens' juries Participatory (systems) modelling SWOT analysis
Plan	Interviews In-depth discussion groups Deliberative opinion polls Review landscape character descriptions Existing quantitative datasets
Deliver / manage	In-depth discussion groups Participatory mapping/GIS Participatory budgeting SWOT analysis Review landscape character descriptions
Evaluate	As under 'Assess'



6.1 Using existing datasets to identify shared values

Introduction

Before considering collecting new data about the shared values people may hold for different ecosystem services and specific places, it is important to consider whether there is existing data available that can provide insights. This type of approach can be useful for many issues such as understanding underlying trends about the importance of nature to the public, focusing on a specific place or a programme connected to a place, or gaining an understanding at a national scale of how society values nature through the way in which it is conserved via designations.

What types of data could we draw on?

We distinguish between three types of existing data that could be explored:

1. **Data on people** – for example data on the use of nature for recreation and the well-being benefits gained from connecting to nature, data on attitudes to the environment and biodiversity. This type of data will primarily identify cultural services / benefits as well as some provisioning and supporting services values (e.g. value of wildlife, biodiversity).
2. **Data on land characterisation and designations** – e.g. National (landscape) Character areas, National Parks, SSSI's, Special Areas of Conservation. This type of data can provide information primarily on supporting and regulating services. The designation of natural areas can illustrate a manifestation of shared values, as they often involve a range of consultations and discussions before designation.
3. **Data on interventions or programmes that encourage people to enjoy nature** - volunteering projects, health walks, Landscape Partnership Schemes, Nature Improvement Areas. This type of data could provide information across the range of ecosystem services and highlight a plurality of cultural and shared values associated with particular places.

The table on the next page provides some examples of existing sources of data from which insights on shared values could be drawn. Much of this information is available in different formats on the websites of organisations such as Natural England, Scottish Natural Heritage, Forestry Commission. Most is available in report form although in some instances such as MENE data tables are available allowing the option to cross tabulate different variables within the data set. Using the method of a desk based study would be the best approach to identify and consider the use of existing datasets.



Table 2. Existing sources of information from which insight on shared values could be drawn.

Dataset	Potential tools/methods
Use/access-type/attitudes (country)	
Monitor of engagement with the natural environment (MENE; England)	Type of destination (i.e. park, wood), frequency of use, duration of visit, main activities, motivations to visit, benefits of visit [MENE is discussed in detail in NEAFO WP5]
Scottish outdoor recreation survey (Scotland)	Type of destination (i.e. park, wood), frequency of use, duration of visit, main activities, benefits of visit
Welsh outdoor recreation survey (Wales)	Type of destination (i.e. park, wood), frequency of use, duration of visit, main activities, benefits of visit
Greenspace Scotland survey	Quality of local green space, importance of green space to local community
Public opinion of forestry (UK)	Use of woodland, frequency of visits, benefits of visits to the individual, the benefits of woodlands to the public
Living in Wales survey (Wales)	Attitudes to the environment, environmental activities undertaken such as recycling, encouraging wildlife in gardens.
Public attitudes and behaviours towards the environment (England)	Beliefs, attitudes towards the environment, and environmental behaviours
Scottish environmental attitudes and behaviours survey (Scotland)	Attitudes to the environment, environmental activities and behaviours



Designations / categorizations of 'scape' (country)	
Local nature conservation sites (Scotland) Local Wildlife sites and Local Geological sites (England)	Locally important nature and landscapes, important for educational purposes, historical value, aesthetic value
Areas of outstanding natural beauty (AONBs) and heritage coasts (England and Wales)	Significant landscape value, natural beauty, distinctive character, historical and cultural associations, flora and fauna
National parks (England, Wales and Scotland)	Nationally important countryside shaped by those who live and work there, cultural heritage, natural beauty, aesthetic value
National character areas (England)	Unique combinations of biodiversity, landscape, geodiversity, cultural and economic activity
Intervention-type dataset (country)	Potential tools/methods
Mentro Allan (Wales)	Health and well-being of at risk groups improved through using the natural environment
Green Gym (UK)	Health and environmental improvements by undertaking voluntary conservation activity in nature
Nature Improvement Areas (England)	Improving nature at a landscape scale through a shared vision of a better future for people and wildlife
Landscape partnership schemes (UK)	Conserving distinctive landscape character focusing on heritage, people and communities
Woodlands in and around town (Scotland)	Improving quality of life in towns and cities through woodland improvements and community engagement



6.2 Risk management for a potentially contested environmental policy on the drawing board

- **Desk based cultural historical study**
- **Media analysis**
- **In-depth discussion groups**

Introduction

Contested environmental policy issues, such as the siting of wind turbines, the creation of major new road or rail routes through green belt/space and changes to the public ownership of natural resources, can provoke strong feelings, sometimes leading to protests as people articulate what is of value to them (e.g. via demonstrations, or web based and twitter campaigns). In order to prepare for this, there are a number of methods that organisations can use to better understand what is of value and how different groups might respond to any proposed changes. A more informed assessment of options can then be made, based on this evidence. The methods outlined below can be used separately but can also be used together to gain a more integrated and holistic view of a potentially controversial issue.

Desk-based cultural historical analysis This approach can be used effectively as a first, low-cost option to quickly scan existing literature over a specified period of time to identify values connected with the potentially controversial environmental decision being considered. There may be literature about similar controversial issues and how these have been approached and the responses to them, which may illustrate how risks might be mitigated or reduced. The desk-based study should cover grey literature and academic literature, as well as potentially wider literature including creative writing (prose and poetry). For example, if one were to consider privatisation of England's publically owned forests, a search of Hansard over the last 25 years would highlight a proposed privatisation

of forests by the Government in the early 1990s that led to significant protest. A search of current cultural literature on trees and woodlands provides a wealth of evidence of the symbolic and cultural value of trees, and the many ways in which this habitat is linked to cultural or societal values, values to society, communal values and transcendental values.

Media analysis

The analysis of news media may be useful to gather a 'snapshot' of current public views, and can be employed to assess public feeling over longer time periods, to assess shifts in values. As such, it may complement a desk-based cultural historical study to provide an up-to-date assessment of current values at a national scale, which may help interpret historical trends and frame decision options. As a gauge of current values, media analysis may prove cheaper and as reliable as a commissioned public opinion poll. Newspaper readership is categorised by demographic classifications (ABC1 and C2DE). Analysis of print news media can give a useful indication of public values according to these social profiles. The circulation, readership and political orientation of a newspaper should be taken into account when undertaking the analysis. A simple snapshot of widely-held C2DE values could make use of one popular 'red top' (for instance, The Sun), while a larger sample size comprised of popular and 'broadsheet' newspapers over a longer time period may reveal large-scale changes in societal contextual values. Depending on the spatial scale at which decisions are being taken, local media can be a useful source of data as well. For larger-scale surveys, access to an archive is necessary, although the costs remain at the lower end of the scale and compare favourably with the costs of public opinion polls. Online newspaper archives are easy to search and provide data for analysis quickly. This method is useful to access cultural, societal and community values, both transcendental and contextual. An example case study is given in Section 7.4.

In-depth discussion groups

This approach is useful and effective when



proposing potentially controversial environmental policies. A desk-based historical analysis and media analysis may provide contextual information to help frame discussion, and the conclusions that emerge from discussion groups may help explain some of the drivers behind values (and shifts in values) identified with these other methods. It is a method that can provide details of the ways in which different groups frame a particular issue and to what extent they might oppose an issue and why. It can help to identify the meanings that lie behind people's assessment and the norms people draw on to make particular arguments. The groups will not be representative in a statistical sense, however different groups of people within society should be carefully sampled so that a wide range of views can be understood. You will want to consider including

“Local media can be a useful source of data”

a range of different demographics related to age, gender and ethnicity. You may want to understand views from urban and rural communities and from those who hold a range of occupations. Besides considering values of the general public, in-depth discussion groups can also consist of a group of stakeholder representatives who can be brought together to consider the policy. Either way, workshop design and facilitation play an essential role in both bringing out more subtle and tacit values, and managing potential power dynamics within the group. The types of values accessed by this method include communal values, other regarding values, transcendental values, values to society. An example of in-depth discussion groups used as part of a broader workshop is given in the Kinloch Rannoch case study in Section 7.5.



6.3 Social desirability of a policy programme that might have significant environmental impacts

- **Social media analysis**
- **Citizen's jury**

Introduction

There are many environmental issues that leave decision-makers with a 'classic' dilemma of economics vs. environment, where there is a potentially fundamental conflict in transcendental values and beliefs. Well-known examples include the construction of new roads and runways and oil and gas extraction, where there are both local and global impacts on ecosystem services. In these contested contexts it is hard to separate evidence and values, and analytical evaluation approaches such as cost-benefit analysis and top-down forms of consultation are often contested or can even lead to further aggravation of the conflict. While these cases are challenging deal with by any means, interpretive and deliberative approaches can be useful to help understand, weigh up and better account for plural values and beliefs. For example, an analysis of social media may provide a useful way to track the public discussion about an issue as it develops or to examine how an issue has been shared and understood. A citizen jury could then be used to evaluate all the evidence around a controversial proposal or program, and come to a final verdict of whether it should proceed or not.

Social media analysis

A range of tools is available for data gathering. The choice of tools used will depend on whether the issue is being tracked in 'real time' or if a prior date range is to be studied using retrospective data. The cost of data gathering will also vary. Free online tools will keep costs down but are limited

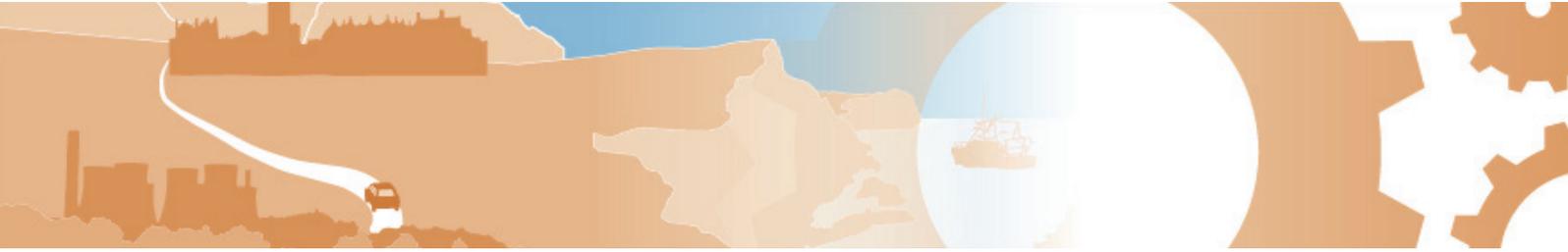
in the type and reliability of the data available for analysis. A more reliable process, although having a greater cost implication, would involve commissioning a bespoke analysis of Big Social Data (big data is a collection of collections of data). A sample will not be representative of a population and mapping against traditional demographic categories may not be possible. However, the widespread use of social media makes its analysis especially useful as a means to understand information flows and the diffusion and propagation of values. For this reason and similar to traditional media analysis, social media analysis is useful to assess cultural, societal and community values, both transcendental and contextual.

Citizens' jury

Citizens' juries are not a legal institution, but rather an evaluation tool that uses a process similar to trial juries. A citizen's jury is small cross section of the general public (usually 10-20 people) who come to a considered judgement about a stated policy issue / problem through detailed exposure to, and scrutiny of, the relevant evidence base. This can include evidence from other ecosystem

“A key benefit of citizens' juries is that they can incorporate a very wide range of values”

assessment tools, including monetary valuation of benefits and costs. Jury members are asked to consider what outcome is ultimately in the best interest of society, whilst weighing this evidence. The outcome of the process is a recommendation or 'verdict'. A key benefit of citizens' juries is that they can incorporate a very wide range of values, as deliberation can incorporate moral principles, rights and duties, societal preferences and consideration of the interests of particular stakeholders and groups. An important part of citizen's juries is the calling of witnesses. These can be experts (e.g. economists commenting on economic benefits, environmental and climate scientists commenting on probability and potential impacts of environmental risks, legal experts, energy industry experts), but also stakeholders



who may be asked to express their values and beliefs (e.g. landholders, residents and activists who explain their concerns). Researchers act as facilitators to help manage and structure sessions, but take care to not influence the outcomes. Jury members often receive some training on process and procedures before the sessions commence.

6.4 Management interventions related to land use change

- **Analysis of published documents**
- **In-depth discussion groups**
- **Visualisations and scenarios**
- **Participatory Mapping / Geographical Information Systems (GIS)**

Introduction

Understanding the values underpinning changes in land management are critical to the success of land use policy and management. Values relating to land use may conflict between stakeholders, from differing contextual values (e.g. about the siting of the boundary for a designated site) to more fundamental differences at the level of transcendental values (e.g. about whether the land should fundamentally be for human benefit and productive use versus more biocentric views that give precedence to non-human species). These clashing values can complicate and delay decisions in policy and practice, in some cases leading to non-compliance (e.g. with orders to restore damaged Sites of Special Scientific interest) or protest (e.g. direct action to disrupt field sports). An early accounting of such differing values during the decision-making process can increase the chance that a diversity of values are reflected in the decisions that are made. Where it is not possible to adequately reflect all values, there is evidence that well-managed deliberative processes can increase the proportion of parties who decide to accept and work with a decision.

Here we will use the example of land use change as an issue where many very different values may be expressed. Land use change may take many forms, e.g. agricultural intensification, changes

in cropping (e.g. planting energy crops), restoring damaged habitats back to good condition or reintroducing native species and forest.

Analysis of published documents and in-depth discussion groups

It is important to understand the values leading to proposed changes in land management to make optimal decisions about the future. This might be established through the analysis of historical accounts and other secondary data sources that can reveal the attitudes of groups of stakeholders towards current management practices (e.g. using tools like discourse analysis). In-depth discussion groups may then be used to understand the deeper-held values associated with the historical, current and possible future management of an area. For example, such a combination of methods might show how conservationists have increasingly shifted their contextual values from species to ecosystems in discourses about land use change, while the transcendental, more biocentric values of conservationists have increasingly been embedded in national land use policy in recent decades, leading to an increasing sense of isolation among many of those who own and manage land, and an entrenchment of more anthropocentric views about the value of a living, working, cultural landscape. Where there is conflict, careful design and facilitation of any interaction between the different stakeholders is of vital importance. It is also important to systematically consider which groups might have a stake in the decision being considered, to ensure key groups do not feel marginalised or contest the legitimacy of the decisions that arise from the process. Once there is a better understanding of the values driving proposed changes, it may then be possible to explore land use and management options with stakeholders.

Visualisations and scenarios

There are many types of land use change, with often unpredictable effects on landscape characteristics. Visualisation methods are a versatile way of describing these landscape changes, and understanding the landscape preferences of



different groups of people. Visualisations may take the form of photographic, artistic, graphical or literary depictions of alternative land use change scenarios e.g. likely change over time under different management approaches such as reforestation or species reintroduction. Where it is necessary to also include changes that are less easy to visualise (e.g. changes in biodiversity can have subtle effects of the landscape), it may be possible to integrate visualisations into a broader scenario (effectively a narrative or story) which describes all the changes that would be likely. Visualisations and/or scenarios can then be discussed, compared and ranked by stakeholders. Deliberation may be used to make explicit links between landscape preferences and the values underpinning them. Deliberation can take the form of in-depth discussion with explicit reference to values (transcendental, communal, cultural) or be embedded in a more structured process such as multi-criteria analysis (MCA) where values are included as criteria. MCA will be discussed in more detail in Example 6.

Participatory Mapping / Geographical Information Systems (GIS)

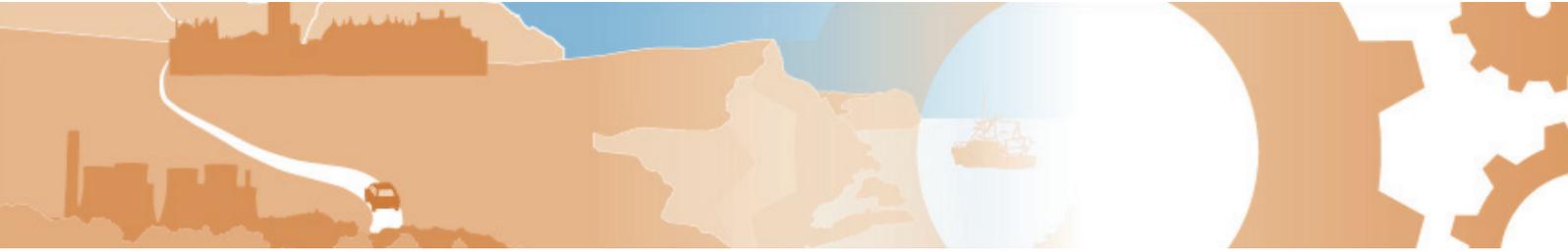
Making decisions about how land-use change should be implemented often requires an understanding of how shared values are associated with specific locations or landscape features. Participatory Mapping and Participatory GIS are an intuitive way of engaging stakeholders in the geographical planning of land use change, and are useful for considering landscape scale changes during land use change. Individual and deliberated group values can be spatially recorded for both status quo management and under alternative management scenarios, e.g. reforestation. For example, values related to wildlife, recreation, culture and livelihoods can be mapped according to how they are delivered by certain parts of a landscape. Creating a visual representation of multiple values (and costs or negative consequences) and grounding these in real landscapes can provide an effective tool for deliberation and can help defuse tension around conflicting views. It must be noted that

many values may not be spatially bounded and participants may not be willing to attach values to specific parts of the landscape.

Practically, the process can be quite simple, such as the use of different coloured sticky dots to indicate features of various kinds of importance or problematic features. These features can then be rated or ranked according to how important they are. The process can be undertaken either by individuals or by small groups through deliberation, which has the advantages that it enhances learning, can lead to more considered choices and can provide more insight into why things are important. The outcomes can then be stored in a GIS. An example of this approach is given in the Forth case study in Section 7.1.

More sophisticated technical tools such as 'touch tables' have also been developed to directly allow small groups of participants to interact with multi-layered, zoomable, electronic maps on what is basically a very large tablet computer. Here, both point and polygon features and their values can be mapped and automatically stored in GIS layers.





6.5 Comparing the wellbeing that people derive from different potential protected areas

- **Storytelling**
- **Psychometric subjective wellbeing indicators**

Introduction

The role of wellbeing to a functioning society is a re-emerging dimension within many policy debates and decisions. The design of indicators to understand what might influence wellbeing in society has become an important focus in research and government policy. The centrality of a healthy natural environment to human well-being underpins recent initiatives including the UK NEA. Within these debates lie questions of what dimensions of wellbeing to consider, to what extent different types of environmental settings and different components within these settings contribute to wellbeing, and how to understand, elicit and measure these potential wellbeing benefits. It is important to recognise that wellbeing is multidimensional. The advantage of non-monetary methods is that they are better able to assess more subtle dimensions of wellbeing that are not-so-easily captured and understood by economic approaches, such as sense of place and identity, spirituality and aesthetics, mental health benefits etc. Here we examine two distinct yet complementary non-monetary approaches

to understanding the wellbeing value of the natural environment: psychometric indicators and storytelling.

Storytelling

Stories are familiar. We have been exposed to them throughout our lives through bedtime stories, radio programmes, television sitcoms or describing one's walk in the park to a friend. Storytelling thus provides a useful format through which to share information, learn about other perspectives and reflection what is important. With respect to wellbeing value the use of storytelling can be particularly advantageous when there is little known about an area, for example, the wellbeing value of a particular type of environmental setting (e.g. marine) or for understanding the less tangible dimensions of wellbeing (e.g. spiritual, emotional). When used with members of a particular community, for example anglers or divers, a set of communal values can be identified and drawn together to gain insight into values within a group. Storytelling could also be used with members of different communities, for example bringing together anglers and divers, as a way to develop a shared understanding through identification of commonalities, differences in expression and different values.

Psychometric wellbeing Indicators

Indicators or closed-ended measures provide a quantitative assessment of wellbeing value. Utilizing measures that have been developed based on theory and tested through research can provide a valuable opportunity for comparison. This is not, however, always feasible. For example, a set of measures developed to understand the wellbeing value of green space may need modification for these measures to be relevant for a marine ecosystem. This may be particularly true for wellbeing values such as place attachment or place identity, which are frequently associated with a specific place. A set of quantitative indicators facilitates assessment of wellbeing value from a larger number of people, which can provide insight into how widely a set of values might be held across a society.



The combined use of the two methods described above is that psychometrics can provide quantitative indicators of the importance of different places compared to each other, i.e. 'the how much'. The use of storytelling then provides a 'why', but will also be able to indicate what dimensions of wellbeing might not have been sufficiently assessed by the psychometric survey. The combined approach can aid decision-making by revealing which places may be more important than others for particular dimensions of wellbeing and what is particularly important about particular places. An example of this is given in the MPAs case study in Section 7.2.

6.6 Project Appraisal

- **Deliberative Monetary Valuation (DMV) to feed into Cost-Benefit Analysis**
- **DMV as an alternative to Cost-Benefit Analysis**
- **Participatory Multi Criteria Analysis (MCA)**

Introduction

Project appraisal refers to the process of assessing the case for proceeding with a project, in a structured way. Generally, it includes the appraisal of a range of different options or scenarios using one or more decision-support tools. The most commonly used economic tools used are Cost-Benefit Analysis (CBA) and Cost-Effectiveness Analysis (CEA). In the former, the relative benefits of a project are compared to the costs. In the latter, costs of different options to achieve a fixed set of benefits are compared against each other. Each of these has a 'social' variant, where not only 'internal' costs/benefits are considered, but also 'external' costs and benefits of others or society as a whole. Future benefits and costs may also be included for a given timespan, and these are generally discounted (i.e. future costs/benefits are counted less than present ones). Increasingly, environmental economic valuation is used to include benefits and costs in

relation to ecosystem services in these calculations. Take, for example, a project that proposes to build a new road. Benefits might include increased connectivity and reduced congestion. Costs might include land purchase, opportunity costs for using that land for other purposes, construction and maintenance costs. As a result of the loss of a woodland, costs might also include a range of ecosystem service values, such as carbon sequestration, amenity, health benefits, cultural heritage, and existence and bequest values.

As an alternative to conventional, survey-based contingent valuation or choice experiments, DMV could be used to assess these values to feed into CBA. However, there are a number of convincing theoretical considerations that suggest the outcomes of CBA should only be taken as a measure of economic efficiency, and should not be considered a measure for the net benefit of society (these are discussed in more detail in the NEAFO WP6 report, Sections 2.4.2 and 5.4). As an alternative, a different type of DMV on the basis of 'social willingness-to-pay', or participatory Multi-Criteria Analysis could be considered.



DMV and participatory MCA tend to take place in a workshop format, usually with 10-20 participants. Close guidance by facilitators is necessary, both to ensure participants comprehend questions and tasks, and to manage the group process using facilitation techniques to minimise the impacts of power dynamics and other potential negative-side effects that can arise in group work. Regardless of which DMV or MCA approach is



taken, these workshops would usually include presentations of objectives, details, impacts and context of the project, and exercises for participants to discuss these in more detail. For assessment of shared values, it is important that there is sufficient opportunity to consider cultural, ethical and political dimensions, and participants' transcendental values more broadly. Targeted exercises might need to be included to achieve this, and to make implicit values explicit so that they can be translated into contextual values, and scores and rankings (MCA) or monetary values (DMV). For example, tools such as SWOT analysis and conceptual modelling can be used to better understand impacts, and interpretive methods such as storytelling or visualisation can be used to bring out more subtle transcendental, communal and cultural values. Examples of this are given in the Hastings case study in Section 7.3.

Deliberative Monetary Valuation

Deliberative Monetary Valuation (DMV) of the environment can encapsulate a wide range of approaches incorporating participatory, deliberative, political and/or social-learning processes, to establish a monetary value for the benefits of environmental goods. In DMV, small groups of participants explore the values that should guide their group decisions through a process of reasoned discourse. DMV can either use an econometric approach for establishing monetary values based on contingent valuation or choice experiments, or it can establish a societal willingness to pay directly through deliberation and negotiation.

DMV to feed into CBA

To feed into CBA, small groups would be asked to discuss their willingness to pay for a particular single scenario (deliberative contingent valuation), or they would be asked to choose between various alternatives (deliberative

choice experiments). These alternatives have various characteristics, usually one of which is the cost. Costs might either be phrased as a measure of individual willingness-to-pay (e.g. "how much would you be willing to pay for this conservation project"), or as a fair price (e.g. how much would be a fair price to ask a member of your community to pay for this conservation project"). The former is the conventional format, and deliberation in this case mainly serves the purpose of helping participants better consider what the impact of the project might be on them. The latter is suitable for group-decision making by consensus and voting. Here deliberation would additionally be around social, political, and moral questions around fairness, responsibility etc., such as who are the winners and losers of different options. NEAFO produced some evidence that suggest that these group decisions were more considered, more strongly anchored onto the value of benefits and less an expression of 'gesturing' than individual values, while at the same time more reflective of the transcendental, deeper-held values of participants. As an assessment of welfare impacts at the individual scale, to feed into CBA fair price values can be aggregated to the population level in the same way as individual willingness-to-pay. DMV on the basis of contingent valuation or choice experiments is bound to some of the same requirements around sample size and representativeness.

Thus, a significant number of workshops may need to be organised. However, this approach may still be more efficient than use of individual interviews (the conventional way of applying complex valuation surveys). Examples of this approach are given in the Forth and MPAs case studies in Sections 7.1 and 7.2.

“It is important that there is sufficient opportunity to consider cultural, ethical and political dimensions, and participants' transcendental values more broadly”

DMV as an alternative to CBA

When using DMV as an alternative to CBA, participants are asked to look



explicitly at what options or scenarios would deliver most benefit of society. In this process, a wide range of evidence can be considered, such as economic costs and benefits, social impacts and distributional consequences, and ecological evidence. As such, this process can be similar to a citizen's jury (see example X), and aspects of both approaches might be combined. Again, shared values play an important role in deliberations, including transcendental values such as fairness, justice and responsibility. The most likely outcome of the process is one or more measures of social willingness-to-pay, i.e. how much society should spend on something. For example, this could be phrased as how much subsidy should be given to a project. If there are multiple project options, a 'budget pie' can be used where participants can allocate a certain amount of money to each option, which can be seen as a measure of their relative worth. An example of this is given in the Hastings case study in Section 7.3.

Participatory Multi-Criteria Analysis

Multi-Criteria Analysis (MCA, also called Multi-Criteria Decision Analysis or Multi-Criteria Evaluation depending on the aim of the exercise) is a decision-support tool for exploring issues and making decisions that involve multiple dimensions or criteria. It allows less tangible cultural benefits related to ecosystem services to be systematically evaluated alongside economic, social and environmental priorities, thereby providing a way of valuing criteria upon which it may be difficult or controversial to place a monetary value. When applied in a participatory and deliberative manner, following stakeholder analysis, workshops could be structured to include the following main steps:

1. **Define and deliberate criteria** through facilitated discussion with stakeholders and literature review (e.g. research, policy documentation). Broad criteria can be broken down into more specific indicators.
2. **Rank or weight criteria.**
3. **Define and deliberate management options.** Options may for example represent current management types or possible future scenarios.
4. **Score management options against criteria.**
5. **Multi-criteria analysis:** Algorithms could be used to combine scores and ranks into a weighted value that describes the overall preference towards each option.
6. **Discuss options based on results.** Outcomes may be deliberated with participants or amongst decision-makers to assess the degree of consensus, negotiate compromise and manage trade-offs.

Criteria and management options may be pre-defined by researchers or determined by stakeholders through deliberation (which substantially increases the length of the process, but can also generate learning and sense of ownership). MCA was developed in the fields of operations research and decision theory, and this is reflected in the focus on algorithms in much of the literature. However, the tool can also be used without algorithms to generate qualitative data about decision-making criteria, to rank decision options and discuss reasons for rank positions (avoiding a 'black box' effect). Decisions on ranks, weights and scores can be evaluated individually and aggregated, or facilitated as a deliberative group process. The latter has the advantage that a negotiated solution can be achieved that balances different interests and accounts, whereas aggregating individual values is somewhat arbitrary (as there are many different ways in which this could be done, as was pointed out above in the discussion on CBA). Before scoring and ranking, deliberation might include reflection on evidence to evaluate relationships between criteria and management options, including empirical data, expert opinion, scenarios and modelling. An example is given in the MPAs case study in Section 7.2.

6.7 Payments for Ecosystem Services schemes

- **Participatory systems modelling (PSM)**
- **Deliberative Monetary Valuation (DMV)**

Introduction

This final example will provide a short application of deliberative methods in a Payments for Ecosystem Services (PES) context. PES schemes provide monetary incentives to landowners in exchange for managing their land to provide some sort of ecological service, such as improving or safeguarding water quality, carbon sequestration, protection of biodiversity or maintenance of cultural landscape features and amenity benefit. The majority of PES schemes are funded by governments, sometimes involving intermediaries such as NGOs, but there is also an increasing number of PES programs that involve contracts between private beneficiaries of ecosystem services and the suppliers of these services. Because many ecosystem services operate at a larger scale than a single farm or estate (e.g. water catchments, habitat connectivity), their maintenance depends on collective action. Thus, there is an obvious potential for the use of group-based deliberative methods to come to agreement on what services might be offered to potential buyers, how, and at what cost. There are also inevitable trade-offs, which can also involve groups of people or communities as a whole. Management of land specifically to optimise a small number of highly valued services (e.g. carbon and watershed-related services) may come at the cost of other cultural, traditional or commercial practices. These trade-offs may affect (often deeply-held) values that may be shared among members of a community (e.g. land managers). For example, in a peatland context, grazing, stalking and shooting practices may be affected by removing drainage to enhance carbon sequestration.

Participatory systems modelling

To evaluate the impacts of measures and understand how trade-offs work, it is important to consider how socio-cultural, economic, and cultural factors interact, and how a change in one will impact on others. Systems are a way of describing interrelated sets of elements or entities. Complex systems, such as social-ecological systems, display complex behaviour with many different properties and patterns arising from relatively simple elements of the system through positive and negative causal feedback loops. In participatory systems modelling (PSM), system models are typically developed through collaboration between stakeholders and researchers. An important motivation for this kind of approach is a realisation that the identification and description of problems is based on subjective judgement. To find a common solution, it is very helpful to first develop an 'inter-subjective', joint understanding of the system that will be affected, such as the combination of landscape, community and local economy where the PES scheme will be implemented. Practically, stakeholders first discuss what variables might constitute the system (e.g. carbon sequestration, amount of drainage, number of sheep, level of community engagement); usually no more than 30 variables are included. Then, a conceptual model is developed to depict causal relations between variables. Finally, reinforcing and balancing feedback loops are identified. If desired, the strength and nature of certain relationships within the model may be quantified and using software it may be possible to identify key variables (e.g. water table depth)

“It is important to consider how socio-cultural, economic, and cultural factors interact”

that certain variables (e.g. greenhouse gas balance) are particularly sensitive to (though this would usually be a substantial research exercise). Often, the outcomes are analysed for different scenarios (e.g.

what happens when drainage is removed) in qualitative or quantitative terms. However, usually the main focus of the exercise is not the model outcome, but rather the process. Participatory modelling exercises are a process of learning, but



can also build trust by structuring discussion and collaboration.

Deliberative Monetary Valuation

After conceptualising the social-ecological system, participants will be able to value different management options and resulting ecosystem service benefits in a more informed way. A form of DMV can then be used to negotiate between landowners and stakeholders, to decide which benefits might be offered to potential buyers, by what kind of management means, and at what price. Reaching a shared value outcome through a deliberated process can be attractive to sellers (e.g. justifying an overall higher asking price and avoiding landowners undercutting one another). It may also be possible to offer a higher quantity of services for sale in a single bundle and reduce the transaction costs of dealing with multiple landowners, which is attractive to the buyer. In addition, negative social impacts of competition

between sellers are mitigated and communal concerns addressed in collective decisions on what to offer and what not, and through what means. Practically the process would consist of identifying and deliberating management options and their impacts in a spatial format (i.e. identifying on a map what would happen where, and what the benefits, costs and trade-offs would be). Then, commitments of individual landowners and asking prices would be negotiated through a facilitated discussion². Application of best-practice facilitation techniques to minimise the impacts of power dynamics and other potential negative side effects of group work is essential.



²Technically, it might be noted that this application of DMV does not establish the full value of ecosystem services, as in this example it is used to establish an asking price rather than willingness to pay (which may be higher; the difference is the consumer surplus). However, this is not of concern if the aim of the exercise is to establish an asking price.

7 Methods case studies

The following case studies show how different methods have been used in real world contexts to elicit and assess shared values in the UK. These case studies have been chosen to illustrate a range of methods, and combinations of methods, used to elicit and assess shared values in a range of different contexts. The first four were based on new empirical research from NEAFO WP6, with the first also including material from WP5, while the last (Kinloch Rannoch) was added to further illustrate interpretive-deliberative approaches. More detail on the NEAFO case studies is provided in the WP5 and WP6 technical reports.

7.1 Inner Forth: Linking participatory mapping and deliberative monetary valuation

This case study considers a regional ecosystem service assessment of the Inner Forth in the Central Belt of Scotland, to help implementation of the Inner Forth Landscape Initiative (IFLI). The IFLI is an RSPB-led partnership for a landscape management project that integrates nature conservation and cultural and social regeneration objectives, funded by the Heritage Lottery Foundation. The research used deliberative monetary valuation (DMV) and participatory systems modelling to assess shared values around a suite of ecosystem service benefits (water quality, recreation, biodiversity) and combined this with participatory mapping, which assessed cultural services in more detail.

Background

This study focused on the inner estuarine area of the Forth, between Stirling and Blackness. Historically, the large, flat floodplain provided rich agricultural land and suitable sites for settlements and industry (glass, whiskey and more recently petrochemicals) to grow. However, due to loss of traditional industries and coal mining over recent decades, local people now suffer from high rates of unemployment and multiple deprivation in terms of income, health, education, housing, crime etc. is considerable, with some areas among the 10% most deprived areas of Scotland. Landscape types in the area include flats, coastal margins, lowland river valley and coastal hills. Key habitats are intertidal mudflats and salt marsh, which attracts thousands of seabirds in autumn and winter. The inner estuary includes SSSI, SPA and Ramsar designations. In the past, much intertidal habitat has been lost and replaced by artificial sea-defences. The RSPB and local partners have been exploring different options for managed realignment of the coastline as a means to restore lost habitat, reduce flood risk and adapt to climate change. The IFLI project will complement this initiative with measures to improve access, aesthetics, interpretation, cultural heritage and skills.

Methods

The research started with stakeholder analysis. This was followed by a four-hour stakeholder workshop (stage one) where stakeholders developed a conceptual system model of the Inner

Forth. This involved 28 stakeholder representatives from a wide range of sectors, including community groups, local and Scottish government, businesses and NGOs, and a number of conceptual models of the Inner Forth, linking economy, environment and society, were developed. The workshop helped to identify key ecosystem service benefits, and

“The IFLI project will... improve access, aesthetics, interpretation, cultural heritage and skills.”



provided a 'template' system model that was used in simplified form in stage two.

Stage two consisted of nine three-hour ecosystem service valuation workshops across the region with 52 community council representatives. These workshops combined conventional and deliberative choice experiments (CEs) with psychological questionnaires, a system modelling exercise and a simple post-it note exercise asking people about their most important transcendental values. The aim of this was both to inform discussions and to bring deeper held values into the discussion. This was followed by a mapping session to identify contextual communal values. Participants worked in small groups of 4-6 individuals.

In the CEs, participants were asked to consider hypothetical new conservation areas, and make trade-offs between new woodland planted, recreational options (e.g. a bird hide or guide in the new area), and impacts of the new area on water quality, total bird populations, protection of locally vulnerable species. These tasks were completed by participants as individuals, by individuals following the values and modelling deliberative exercises, and finally group decision-making following deliberation (consensus or voting) to establish deliberated group values. In the mapping exercise the small groups would consider a large, laminated map of the Inner Forth area. They were then asked to each individually come up with three activities or practices they engaged in in the landscape, in the broadest sense. Then, they were asked to discuss and point out, as a group, which features (natural or man-made) within the Landscape Initiative project boundary were interesting, special, or should be conserved and indicate these with green dots. Facilitators recorded descriptions of these features and reasons why they were mentioned, before participants voted on which were most important.

Groups used the same process for problematic features, using red dots. Throughout the process, discussion was encouraged.

Results

The combination of monetary valuation, deliberation and mapping was able to identify how much particular ecosystem services were valued and why, both in a general/abstract sense



through the choice experiment and in a specific sense through the maps. The CEs revealed that there were clearly divergent preferences between those south of the river, who were keen to see more woodland planted, and north of it, where there was no particular interest in this. Across communities there was a far stronger preference for focusing on the diversity of bird species and protecting vulnerable species, rather than their overall abundance; here moral arguments outweighed the benefits of the spectacle of large flocks.

“It is not really beautiful in the way that people usually think...but I feel quite proud of this place.”

The systems modelling exercise was important in that it brought out the key role of biodiversity for a wide range of benefits, but also put nature conservation in a broader social context. Discussion of transcendental values and deliberation during



the CEs helped participants consider issues around fairness and responsibility. The results of this were that willingness to pay (WTP), as a value indicator, was substantially reduced in the deliberated group values compared to the non-deliberated values, with the deliberated individual values sitting half way. Notably, WTP for protection of vulnerable species, which was seen as a moral responsibility, declined substantially less than for recreational goods, which were seen more in the light of both other environmental projects and other social priorities such as education.

The mapping results clearly showed the potential for the IFLI project to improve cultural ecosystem services by resolving local access issues, improving connections between local access options across the region and publicising the many places available where people can engage with the landscape. The combination of mapping and ranking showed to be a useful and practical tool in terms of expressing priorities for management measures. Participants themselves expressed that they experienced the mapping as satisfying, adding a more concrete element to the relatively abstract monetary valuation session. In discussions during the DMV, participants expressed positive things about their landscape (e.g. bird populations), but also contrasted it with more spectacular regions of Scotland. Much of the importance of the landscape lay in that local people did not have the resources to go and recreate elsewhere. The process of mapping served to articulate different values, influencing how



participants viewed and felt about the Inner Forth. "I was surprised we came to much more green than red dots. This is not an area that people know for being attractive. It is not really beautiful in the way that people usually think about places like the Highlands or the west coast. But looking at it this way I feel quite proud of this place."

More information

The monetary valuation and systems modelling elements of this case study are discussed in more detail in the NEAFO WP6 report; the mapping element is considered in more detail by WP5. For more details on IFLI see www.innerforthlandscape.co.uk



7.2 The value of potential UK marine protected areas

This large-scale case study, also part of WP6, was an assessment of the value of cultural ecosystem services of potential marine protected areas (MPAs) to divers and sea anglers in England, Wales and Scotland, in association with the Marine Conservation Society (MCS), the Angling Trust (AT) and British Sub-Aqua Club (BSAC). The main focus of the study was to consider whether shared values elicited through a series of deliberative workshops were different from individual values elicited through a 'conventional' online valuation survey. However, the study also provides an example of how monetary valuation can be integrated with various types of non-monetary valuation to provide a more comprehensive account of values.

Background

The study took place within the context of decision-making around how to extend the

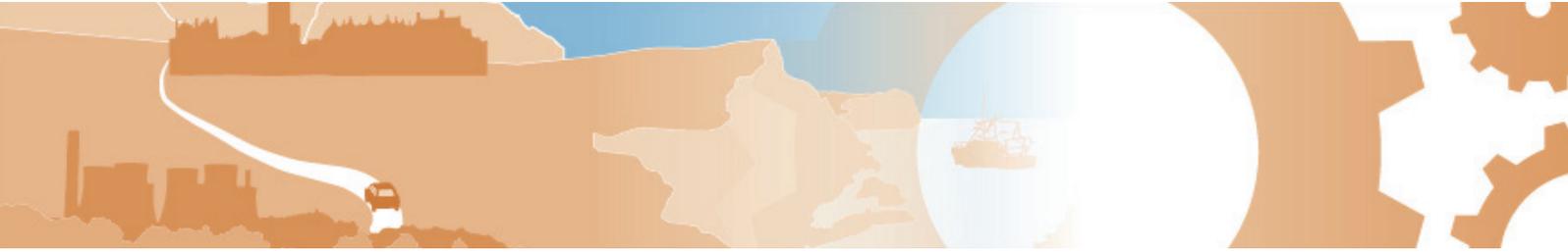
network of UK MPAs to establish an ecologically coherent network. At the point of study, 127 potential Marine Conservation Zones had been recommended in English waters through an extensive process of stakeholder-engagement and 35 locations were being considered as Scottish MPAs. While there was data available on the costs of management options to different stakeholders, little data was available on socio-cultural and economic benefits.

Methods

Data gathering consisted of two phases: an online survey³ with 1,683 divers and sea anglers across the UK, and a series of 11 DMV workshops with 130 participants in total and five MCA workshops with 55 participants across England and Scotland. The survey contained a monetary valuation component but also a novel non-monetary survey instrument on subjective well-being. Monetary valuation in the survey included a



³ The online survey led to an extensive peer-reviewed UK NEAFO interim report on UK divers and sea anglers' aggregate use and non-use values for 25 Scottish potential MPAs, 119 recommended Marine Conservation Zones (MCZs) in English waters and seven existing Welsh marine Special Areas of Conservation, while the results of the workshops and a comparison between survey and workshop results can be found in the UK NEAFO WP6 final technical report.



combination of transport-cost based CEs, which were used to estimate recreational values from a user perspective, and contingent valuation (CV) questions that asked about WTP towards protecting sites into the future from a stewardship perspective. In the DMV workshops, the same CV questions were asked so that results could be directly compared. An innovation was the use of attributes in the CV tasks, which made it possible to associate WTP with specific aspects of sites, as in CEs. Attributes included vulnerable species, marine landscape/habitats, presence of large fish, other charismatic species, wrecks and rock formations, access options, management restrictions, size, and

travel distance. The non-monetary component asked participants to respond to 15 statements on subjective wellbeing associated with the sites that they visited (**Table 3**) and psychometric tests on their values, beliefs and norms.

Table 3. Subjective wellbeing question in the MPAs case study

1. Visiting these sites clears my head.
2. I gain perspective on life during my visits to these sites.
3. Visiting these sites makes me feel more connected to nature.
4. At these sites I feel part of something that is greater than myself.
5. These sites feel almost like a part of me.
6. I feel a sense of belonging in these sites.
7. I've had a lot of memorable experiences in these sites.
8. I miss these sites when I have been away from them for a long time.
9. Visiting these sites has made me learn more about nature.
10. I have made or strengthened bonds with others through visiting these sites.
11. I feel like I can contribute to taking care of these sites.
12. I have felt touched by the beauty of these sites.
13. These sites inspire me.
14. Visiting these sites leaves me feeling healthier.
15. Visiting these sites gives me a sense of freedom.



The DMV workshops consisted of two stages of deliberation and four further valuation stages. The first deliberation stage focused on exchange of information. This was followed by valuation stage 2, consisting of a set of individual WTP CV questions, and valuation stage 3, where participants were asked to discuss the same tasks as a group and come to a decision on what would be a 'fair price' to ask divers and anglers. A next deliberative intervention focused on exchange of experiences and values. It included storytelling by participants linked to a group discussion on feelings of well-being associated with visiting marine sites, and a discussion of personal and shared transcendental values on the basis of a values 'compass'. This was followed by another individual and group valuation stage. Participants ended the workshop by completing a questionnaire with the same subjective wellbeing and psychometric questions as in the survey.

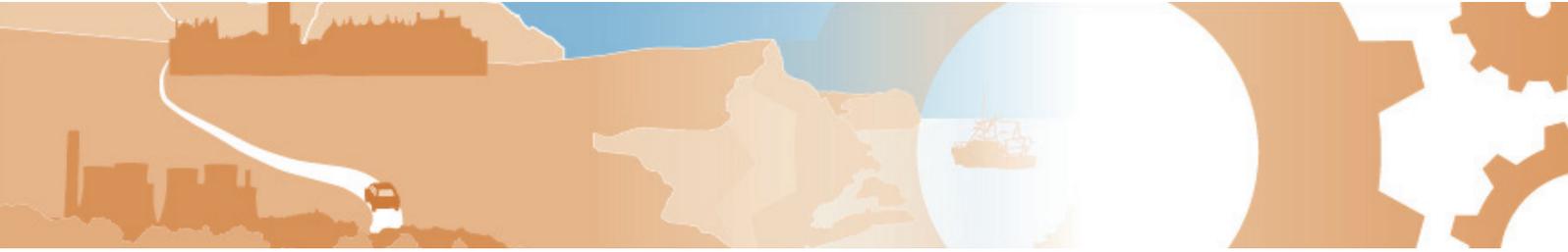
The MCA workshops presented participants with a set of goals/criteria that were designed to reflect the cultural and associated values of recreational users and a number of scenarios reflecting different MPA management regimes (low, moderate and high levels of protection/restrictions) across different marine settings (e.g. sea loch, harbour, sandy beach). Participants assessed the importance of different goals as individuals and as groups and then scored how well different management options realised those goals at different settings.

Results

WTP substantially decreased as a result of both deliberations on transcendental values and well-being (through the values compass and storytelling), and group-based deliberation where group values were expressed as a 'fair price', with a total decrease of 51% compared to the online survey results. Explanations for this change were similar to those in the Forth study: participants more clearly scrutinised the sites presented to them and they more clearly evaluated them against other societal priorities. Changes in monetary values of particular attributes could also be seen. The support for management restrictions (e.g. on dredging and trawling) increased after both interventions. Thus, both giving more information and prompting participants to consider their transcendental values increased participants' perception of the importance of management restrictions at marine sites. In contrast, the combination of moralisation and group decision-making in stage 5 led to negative appreciation of restrictive access options (shore only and boat only). Here, discussions pointed towards an arising sense of solidarity between users around access rights. In the final set of group deliberated values, there was also a convergence between WP and the subjective wellbeing indicators, whereas previously these two types of value indicators did not correlate with each other. Another change was that in the workshops participants formed values for many types of habitats that they didn't have in the online survey.



Storytelling during the DMV workshops brought up a range of themes that expressed how communal values, shared experiences and identity related for both divers and anglers. The majority of diver stories related to connection with the environment and in particular their immersion in this environment, so as to feel part of it. Divers experiences were often conveyed as spiritual, magical and imbued with colour. The diving experience itself was also social



and divers referred in their stories to bonding with their dive mates and building trust as a result of their dives. Stories were often related to the exploratory, adventurous aspect of diving and the feeling of freedom felt as a result of taking part in this activity. Divers tended to emphasise this exploration/adventure aspect as a positive for diving in UK waters, which were described as more challenging but much more interesting through their high diversity than commonly dived sites abroad.

The stories told by anglers tended to present this activity as a more solitary, reflective and therapeutic activity than diving, where a stronger connection with place was fostered. Although connection with nature remained a significant theme, anglers referred to themselves as observers rather than the participants that the divers saw themselves to be. Anglers also tended to share stories about introducing angling to others and the influence that this has had for someone else. In particular these stories were about passing on knowledge or experience to a younger person.

In the MCA workshops, focusing the deliberation and scoring on site-based values helped tie values to specific landscapes and was useful for understanding qualitative well-being benefits such as sense of place, identity and memorable experiences. The ranking results indicated that participants expressed different values as a group to those expressed as individuals, with the group rankings more strongly orientated towards education and less strongly protecting recreational opportunities. Some groups carried out the group consensus exercise from the perspective of their personal needs, but the majority approached the exercise from a wider societal perspective, where it was felt that prioritising environmental protection would benefit both themselves and wider society.

As in the DMV workshops and the Forth case study, deliberated individual values fell between non-deliberated individual values and deliberated group values. Ranking and scoring results appeared to reflect trade-offs between other-regarding, transcendental values and norms, particularly environmental protection, and self-regarding, utilitarian values (focused on recreational opportunities). Fairness and proportionality around measures was a consistent theme, particularly for anglers, as participants commented that restrictions on recreational access should be proportionate to those applied to commercial fishing, which was thought to have far greater impacts than recreational use.

Almost half of the participants felt substantially more confident about their answers in DMV and MCA workshops than in the online survey; few respondents felt more confident in the survey. Asking people for their opinion on which approach should be used to assess their values around marine sites, the majority of participants indicated they preferred the workshop format and most of those preferred group to individual choices.



7.3 Hastings: Valuing the sea in a broader societal context

This in-depth local case study focuses on valuing ES around inshore fisheries and marine conservation in Hastings, Sussex. Working with the Hastings Fisheries Local Action Group (FLAG) this case study focused on shared values for the cultural benefits of the marine environment and activities within it, particularly inshore fisheries, such as a shared sense of identity and sense of place. The main stage of data gathering consisted of three intensive workshops with 11 local stakeholder representatives, and included deliberative MCA and DMV extended through a mix of quantitative and discourse based qualitative non-monetary valuation exercises. These group deliberative interventions included: a SWOT analysis of the Hastings community; structured in-depth discussions; shared storytelling and reflection; a transcendental values 'compass';

participatory conceptual systems modelling; visioning; and informal deliberation during group beach walks. The MCA and deliberative exercises finally led to an innovative implementation of DMV through policy package development and negotiation and participatory budgeting.

Background

Hastings is a town of around 87,000 inhabitants on the south east coast of England and one of Britain's oldest fishing ports. Boats have worked from the beach in front of the ancient town for over a thousand years, supplying Hastings with its core industry and main tourist attraction. The artisan fleet of around 25 under 10 meter vessels is seen to represent an environmentally benign approach to fishing and has been strongly vocal in terms of supporting marine conservation efforts. However, artisan fisheries in the UK have over recent years fallen outside of the European Common Fisheries Policy quota system, which meant that the fleet was not allowed to catch significant amounts





of key species⁴. This encouraged economic diversification of the fishing community and building stronger alliances with others, e.g. local culture and arts organisations. Another issue faced by the fleet is keeping and attracting young people into the industry and transferring traditional knowledge to future generations. Finally, climate change poses longer-term threats to the beach,

changing accretion patterns, which lead to the beach becoming steeper, making it difficult to land boats in bad weather. While the 'Old Town' of Hastings faces these issues surrounding the marine environment, Hastings 'New Town' faces broader social deprivation issues, as one of the most deprived towns in the south east of England.



⁴ However, shortly after the series of workshops took place in May 2013, Hastings fishermen finally secured new quota rights in court.



Methods and results

The initial part of workshop one focused on discussion of transcendental values and well-being. Following a round of storytelling on why the marine environment was important to each participant, small groups used a transcendental values 'compass' to reflect on the deeper values the personal stories had elicited. A number of values emerged as being dominant including 'sense of belonging'; 'enjoying life'; and 'protecting the environment'. Values of self-direction (including creativity and freedom) and social justice also featured prominently. When these results were presented back in workshop two, participants expressed that they were struck by the way that these values accurately captured their view of the core values and identity of the town. After these discussions on deeper held values, a more pragmatic SWOT analysis ultimately led to 10 key goals that reflected environmental, social, economic and cultural aspirations (Table 4).

Based on workshop one results, the researchers developed four 'visions' for Hastings in 2030: *City of Culture*, *Green Hastings*, *Greater City* and *Business as Usual*, that were then put into a physical context through informal discussion during a beach and seafront walk, which led to participants linking the marine environment with the need for improving education and locally culturally appropriate economic regeneration.

Participants continued making extensive connections between a wide range of issues in a conceptual systems modelling exercise similar to that in the Forth case study. Results showed an appreciation of the highly inter-linked (and complex) nature of the relationship between variables as participants made extensive linkages between ecological, social, economic and cultural variables. Well-being was related not only to economic factors, but also pride of place, social cohesion, social justice, biodiversity, and in the long term, resilience to climate change. While participants reported that they had felt this to be a challenging exercise, feedback reports also showed this to be one of the most rewarding in terms of shared learning.

An MCA was then conducted to evaluate the visions. First, the ten key goals identified earlier were ranked in terms of importance, first by individuals and then deliberately by the group as a whole. A key change from individual to group regarded resilience to climate change, which increased in importance from a mean of 60 to a consensus score of 100. The second stage involved scoring visions in terms of their ability to deliver goals. Weighted scores show the Green Hastings vision was perceived by the group to be best able to achieve goals, followed by City of Culture.

Table 4. Group key goals for Hastings used in MCA and DMV exercises.

1. Reduced unemployment
2. Increased social justice
3. Increased community cohesion
4. Economic growth
5. Resilience to climate change
6. Conservation of biodiversity
7. Reduced pollution
8. Strong cultural identity
9. Engagement with nature
10. Well-educated population



by the shared learning and common knowledge of the complex inter-linkage of community variables (economic, cultural, social and environmental) developed in the systems modelling exercise in the previous workshop. Examples of this included improvement of the harbour arm, both as a sea defence to adapt to climate change and as a support for the beach launched fleet central to the cultural identity and touristic attractiveness of the town; and development of an affordable eco-housing project, which again addressed environmental, social justice and economic goals.

The elaborate mixed method design applied went into more depth but with a smaller number

The former scored highest because it was the only vision that was seen to significantly address important goals related to biodiversity, climate change and pollution.

In the final workshop, a DMV was introduced where Hastings would receive a hypothetical Strategic Sustainable Development grant by the EU of £45 million to spend between 2015 and 2030, and where participants were asked to find agreement on social WTP for different policy options. Investments would focus on the 10 key goals, and participants were asked to negotiate a policy package, mixing and matching elements of the different visions and adding new policies. In development of options, participants focused on maximising synergies of the policies in terms of different environmental, cultural and social-economic benefit. This process was partly enabled

of participants and on a smaller geographical scale than the MPAs and Forth studies. It showed the potential of the combined use of different deliberative (e.g. in-depth discussion) and deliberative-analytic (e.g. participatory systems modelling) tools, to come to sophisticated consensus-based group values and securing shared learning between stakeholders, in terms of both the motivation for values attributed to the marine environment in Hastings and the democratic outcome value of the process of deliberation and dialogue. The benefit of social learning was explicit in the discourse of group discussions and feedback comments. In general, societal/cultural and communal values were evident in the early group benefit ranking exercises with this set of values appearing close to the surface for the beneficiaries in their day-to-day

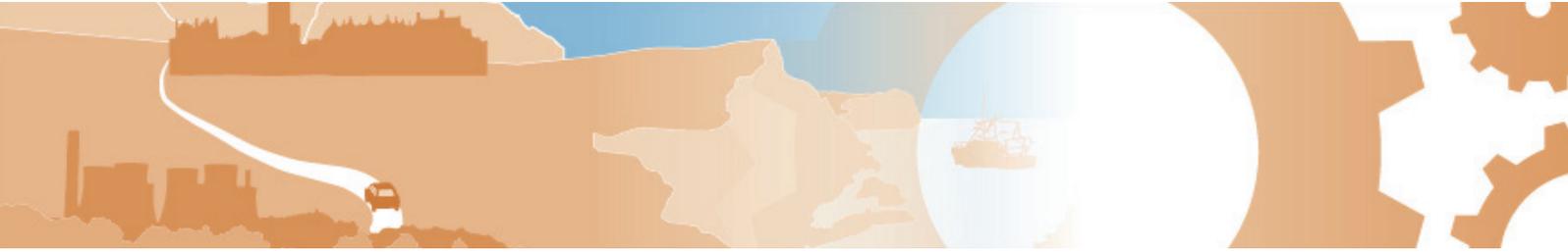


stakeholder roles. Value to society and other-regarding values were more forthcoming from the evaluation of visions and systems modelling that forced participants to discuss and consider the different scales/time periods of benefits and the variety of stakeholders affected. The storytelling exercise was effective in terms of both elicitation and characterisation of intangible cultural ES benefits such as place identity, and elicitation of transcendental values. Given the complexity and interdependence of cultural ES benefits it was to be expected that discussions were highly mobile and would result in the emergence of a plurality of types of values, with participants discussing

a mixture of transcendental or contextual value types at different scales with different intentions and with varying indicators of those values. The freedom of the deliberative process opened up the multi-dimensional nature of ecosystem values in a way that conventional individual monetary valuation processes are unable to do.



Hastings has the largest beach-launched fleet in the UK.



7.4 The coast in the media

The fourth WP6 case study analysed written media coverage of the UK coastline and MPAs to characterise shared and cultural values expressed in different types of media publications and considers the types of values that these might represent for different groups within UK society. It utilised a mix of quantitative and qualitative approaches to the analysis of the expression of values. Content analysis was used to examine large text samples, identify broad patterns and quantify the use of specific terms over a particular time period. Discourse analysis was employed to analyse a smaller sample, taking account of context and focusing on the identification of particular values.

The broader sample studied shows that there was an overall increase of 46% and 200% in the frequency of the terms 'environment' and 'ecosystem' respectively, in national and regional UK newspapers between 2002-2012. It is reasonable to suppose that the overall rise in the frequency of use of these terms indicates an increase in news media coverage of environmental stories over this period, and this is likely to reflect a parallel growth in public interest in such issues. However, the way in which these stories were covered differed markedly between different media publications. Overall there was significantly greater engagement with environmental stories by broadsheets compared to tabloid newspapers.

In the sample, articles established a relationship between the material loss of coastline from erosion with shared values expressed in terms of national culture, heritage, tradition and identity. By normalising national identity as something that is shared, these stories framed the loss of coastline through erosion, flooding, etc., as a collective loss that compromised shared values for the natural environment. Shared values associated with the coastline tended to be expressed as transcendental societal and communal values.

Within this narrative, it was possible to identify groups with shared communal values for the natural environment that differed substantially

from the communal values of other groups. For example, The Times characterised the coastal erosion primarily in terms of national identity and security (in relation to war and smuggling), livelihoods and property. In contrast, The Guardian linked to a very different type of national identity, rooted in a return to historic times, characterising the coastal erosion primarily in terms of a return to natural coastal habitats that could create a natural buffer to protect coastal communities.

Other-regarding transcendental values (i.e. overarching principles and goals that are not just for oneself) were apparent in coverage of the right to roam debate where access to the coast was claimed to be a citizen right. Similarly, aesthetic benefits of the coastline were mentioned in 22% of stories, linked to transcendental societal values, and these benefits were used to counter the economic self- or group-regarding values of coastal wind farms, dredging and drilling activities.

In articles about MPAs, industry (fishing and renewable energy) and Government budget cuts were seen as antagonists, threatening shared values for marine species that would be protected under these designations. In this case, industry was generally associated with individual or collective self-regarding values, pitched against transcendental societal and communal values for the marine environment.

Overall, the study illustrated how news media are part of the public deliberative process, highlighting particular concerns, developing debates, aligning values with stakeholders, and structuring narratives of environmental and ecological risk and protection. Media analysis is able to characterise the plurality of cultural, societal and transcendental values and their interrelations, and the different values associated with different interests and different sectors of society. This may help predict where conflict could occur as a result of a new policy and how potential tensions might be prevented or managed better by decision-makers. As such, this approach is a promising avenue to characterise societal and cultural values at a large scale and consider changes in values over time.



The Black Wood at Rannoch.

7.5 Kinloch Rannoch, Forest Futures: Artistic engagement, interviews, deliberation and social learning to reveal hidden cultural values

This final case study examines a deliberative process of social discourse and learning intended to recover lost cultural values, create new meanings and imagine alternative futures for the Black Wood of Rannoch in Highland Perthshire. The Black Wood is the most significant remnant of ancient Caledonian pine forest in the Southern Highlands of Scotland, a product of hundreds of years of use and management; the forms of the dominant trees were shaped during the political upheaval of the 18th Century. In 1973 the Forestry Commission (FC) used conservation science to protect the forest from its own policies of intensive management; today the same logic of scientific conservation constrains public access and engagement, and effectively manages cultural values 'out of the system'.

Working with a wide range of partners representing diverse interests, including arts practitioners, humanities scholars, government agency and NGO representatives, and local residents, the physical and aesthetic condition of the forest and its historic management were critically reviewed. Site visits, workshops and

residencies helped establish current ideas about ecology, landscape and culture, while interrogating preconceived ideas about 'appropriate' human-forest inter-relationships. The social and cultural domain was understood as a safe place to reconsider meaning and value, helping conflicting parties to find common ground in the protection of the Black Wood. Outcomes included concept plans that recognise a suite of shared values and a desire for future effort to resolve concerns about access and awareness.

Background

'FUTURE FOREST: The Forest is Moving' was funded by the Imagining Natural Scotland programme of Creative Scotland, and led by environmental artists at the Glasgow-based Collins and Goto Studio. The project sought to make a small contribution to the Black Wood, and the local communities that help define it, as part of a 'critical forest art practice' that also considered the Caledonian forest as a whole. Biodiversity preservation is the essential management focus within the forest, which was designated as a Special Area of Conservation (SAC) in 2005. The management plan limits facilitation of public interest and engagement that does not directly serve the conservation interest. As the project began, it became clear that many in the Rannoch community had a primary interest in renewed engagement and access to the forest in culturally meaningful ways, while making it clear they intended no harm.



Methods

Over a one-year period, partnerships were established by the artists with key stakeholders, and consolidated through residencies at the Perth Museum and Art Gallery, Forest Research near Edinburgh, and in the Kinloch Rannoch community and forest itself. The artists worked closely with local Forestry Commission (FC) staff, and the Perth and Kinross Countryside Trust who seek to (re) establish historic core trails across South Rannoch. These relationships kept the work grounded in specific, relevant issues while ensuring a broader understanding of the policy and decision-making context.

The first attempt at a collective 'walk and talk' in the forest revealed overt tensions, but also a sense of unacknowledged common ground. Plans for a 'future forest' workshop evolved from this initial encounter. The artists worked with partners to agree overarching questions, the breadth of interests that should be invited, and a programme that included forest walks accompanied by FC staff, a public discussion, and the core workshop itself which ran over two days.

Around 30 participants attended. The workshop presentations began with local stakeholder perspectives, then ecological perspectives, a broad set of cultural perspectives, and followed by two intensive in-depth 'Future Forest' break-out groups, focusing respectively on 'community' and 'planning and management'. Maps and management plans of the Black Wood and wider region helped participants locate aesthetic and cultural interest (including an undeveloped portfolio of cultural heritage sites) and access opportunities within the forest.

Results

During the workshop, new ideas were introduced, helping participants talk about and reframe problems and imagine solutions. It was suggested that cultural values could be objectified (as artifacts within a landscape), but also institutionalised (through language, stories, art, music or literature). Alternatively they may be considered as ephemeral

“A collective 'walk and talk' in the forest revealed overt tensions, but also a sense of unacknowledged common ground”

values that are embodied in users or practices, memories that occur in a place or in some aesthetic relationship or condition within the forest itself. It was argued that cultural values were an essential compliment to the facts and data of science: the

open-ended nature of the 'cultural question' made it useful as a framing device that challenged the linearity of ecosystem services assessment. Scholarly presentations on environmental aesthetics, the descriptive qualities of the Gaelic language, and the aesthetics, ethics and politics of walking in Scotland surprised some participants with their relevance to a more nuanced understanding of the Black Wood and its historic landscape.

Much of the project involved building bridges – both socially and conceptually – between the exclusionary principles and agents of conservation science and the potentially inclusive domain of art and culture. Participants approached consensus on the transcendental values and value to society associated with the Black Wood. Transcendental values were seen to be embedded in the aesthetic experience and scientific understanding of the forest as well as the respect for the complexity and fragility of its ecosystem. The partners shared a sense of the forest as a cultural symbol: an idea and an image with great social value, although it was not agreed where that value to society was accrued. The workshop largely focused upon tensions between divergent cultural and communal values held by the stakeholders.



A multi-screen installation of time-based artworks by Tim Collins and Reiko Goto, exploring the experience and the social context that shapes both the experience and the changing form and meaning of the Black Wood of Rannoch. Presented at the Perth and Kinross Museum and Art Gallery in 2013.

Where there was common ground on the non-human aspects of other regarding values, there was mutual distrust about the ethical intent of other stakeholder groups. But this had largely dissipated by the end of the workshop. The cultural values that remained in tension focused on exclusion to support biodiversity, the renewed interest in centuries old core paths in the region, and the idea that the forest (as a place) has essential cultural import for all of Scotland. These conflicting ideas align with the Rannoch community's communal values associated with improvement to public awareness and access to the forest as an element of their tourist economy. But they remain opposed to government agencies' own set of communal values, that constrained access based on their own ideas about future forest well-being.

Through the breakout groups there was recognition of the desire to promote a wider understanding of the Black Wood, and efforts to restore the Caledonian forest, and agreement that to change the character of the Black Wood would be wrong: the forest should be managed for aesthetic form and a culturally-meaningful ecological outcome. Further planning exercises with the 'forest community' are much desired as a means to address the conflict around

awareness, access and branding.

“ Much of the project involved building bridges – both socially and conceptually ”

More Information

To access a blog about the project, the workshop programme, video clips of the presentations and the final report to the partners see <http://eden3.net/future-forest/>.



Workshop participants on a site visit to Black Wood.

Published in 2011, the National Ecosystem Assessment (NEA) was the first comprehensive analysis of the state of the UK's natural environment in terms of the benefits it provides to society. This handbook is based on the findings of research conducted as part of the Shared, Plural and Cultural Values work package of the UK NEA Follow-on. The project was conducted between 2012-14, involved 21 researchers from eleven different Universities and research institutes and was led by the University of Aberdeen and Birmingham City University. To find out more about the research that this handbook is based upon, visit:

www.lwec.org.uk/sharedvalues.



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