Naturally Speaking...

A Public Dialogue on the UK National Ecosystem Assessment

Final Report

Dialogue Cartoons by Luke Warm

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DIALOGUE PARTNERS

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Sciencewise is the UK's national centre for public dialogue in policy making involving science and technology issues and is a programme of the UK government's Department for Business, Innovation and Skills.

Natural Environment Research Council
NERC is the leading funder of independent research, training and innovation in environmental science in the UK.

Defra
The Department for Environment Food and Rural Affairs is the UK government department responsible for policy and regulations on environmental, food and rural issues.

FRONT COVER ILLUSTARTION: **Courtesy of Luke Warm**

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KEY MESSAGES

A fundamental and unambiguous connection was drawn between the natural environment and the well-being of people. The natural environment was valued by participants for a range of cultural and health benefits and considered central to human livelihoods and prosperity. Yet participants were generally pessimistic about the future of their local natural environments at the outset of the dialogue and ambivalent about whether progress was being made on current and emerging environmental risks and challenges.

The work of the National Ecosystem Assessment (NEA) was viewed as providing an authoritative, though quickly dating, body of evidence. Participants were generally encouraged to learn that an assessment of the scope and ambition of the NEA had been commissioned by government and its findings should be welcomed and acted upon by policy and decision makers. At its most positive, some participants suggested the Assessment might serve as a modern day and environmental equivalent of the 'Beveridge Report', around which publics should be encouraged to rally.

The concept and framework of ecosystem services advanced by the National Ecosystem Assessment was viewed in a cautiously positive, or constructively critical, way by participants. They were particularly supportive of its holistic ambitions and its interconnected perspective and felt that it would challenge preconceived wisdoms about the remit of the environmental agenda. However, a significant minority were sceptical about advancing use of the term 'services' to describe and manage human uses and understandings of nature. They felt it was consumerist in outlook and expressed concern that people would end up paying for things they currently have the right to access and use freely. In general, participants tended to be more positive about the concept and framework of ecosystem services the more they considered it in the context of decision making and real world applications of the Ecosystem Approach.

Many of the characteristics that participants associated with good decision making about the natural environment are consistent with the principles of the Ecosystem Approach. The positive and inclusive outlook of the Approach appealed to people, and they saw procedural and economic advantages in applying these principles. They felt it helpfully emphasised natural solutions to environmental challenges. However, a number of risks and challenges were identified in taking the Approach forward including how to: foster awareness and engagement of relevant stakeholders; create a credible evidence base; implement goals and; ensure that objectives are met over the long term.

State and third sector actors were considered to play a central role in governing and delivering ecosystem services. Participants were generally suspicious about the interests and involvement of business in dictating and delivering priorities for the natural environment. Participants viewed national government as playing a strong enabling and leadership role, and valued highly the role of publicly funded institutions and programmes of research to deliver long term public benefit from the environment, and to protect against risks. They viewed third sector actors, particularly those with localised and specialised environmental remits, as playing an important role in managing and informing new arrangements for ecosystem services delivery, such as 'payments for ecosystem service' schemes.

Valuation techniques were considered helpful within policy and decision making processes, although participants queried how valuation evidence is created, what it signifies and what it can be expected to do. Participant views on the use of valuation methods had political, ethical and tactical dimensions and were often sensitive to the scale and object of decision making. Monetary valuation techniques were considered important tools for helping to communicate and influence the general case for natural environment and were often associated with the virtues of transparency, objectivity and clarity in decision making. They were interpreted as a necessary, but insufficient, basis for decision making. In general, the rationale and need for different types of valuation was sensitive to the perceived uncertainty and complexity of a decision issue and whether the issue was of national and local concern. Overall, there was a very strong message about the need for pluralistic approaches to valuation, especially for issues of high complexity at all levels of decision making.

The dialogue saw many virtues and challenges in the use of 'Payments for Ecosystem Service' schemes (PES) at the local level. They liked the PES focus on rewarding and encouraging positive behaviour, although they frequently returned to the idea of 'polluter pays' in order to emphasise that poor environmental practices should be penalised. There was concern that PES schemes appear rather voluntaristic and market orientated in outlook, but participants recognised

that there are many opportunities and rationales for a variety of local beneficiaries to pay in to schemes. In terms of the co-ordination and implementation of local PES schemes, participants overwhelmingly associated desirable scheme design and implementation with the involvement of third sector organisations.

A desirable future for UK ecosystems shared many of the characteristics of the NEA perspective. Participants emphasised desirable futures in terms of: multifunctional uses of the environment; social values cohering around care for the environment; active participation of communities in decision making; pluralistic forms of evidence to inform management; a strong leadership/enabling role played by government; and technology playing a central role in innovation towards sustainable landscape and ecosystem management.

EXECUTIVE SUMMARY

About this public dialogue

- The purpose of the *'Naturally Speaking…'* public dialogue was to open up the concepts and findings of the UK National Ecosystem Assessment (NEA) to public debate and scrutiny as the basis for informing applications of this assessment work within natural environment policy and practice.
- The dialogue was run in partnership with the Natural Environmental Research Council (NERC), the Department for Environment, Food and Rural Affairs (Defra) and Sciencewise, the UK's national centre for public dialogue in policy making involving science and technology issues.
- From a Sciencewise perspective, public dialogue provides a forum for active and critical public engagement with innovations at the interface of science, policy and practice. The work of public dialogue more generally reflects the ambitions of the government's *Open Policy Making* agenda: that is, being open to new ideas, ways of working, evidence and expertise, including the insights of citizens without formal roles and responsibilities in specific areas of policy making. This commitment to dialogue extends to the strategic priorities of Research Councils UK, specifically reflecting its *Concordat for Engaging the Public with Research* and its commitment to research impact, to add value and benefit to policy informing research and to augment its impact with respect to issues of public interest and concern.
- The project follows a set of general principles of public dialogue developed by the UK Government and set out by Sciencewise. In general, the emphasis of dialogue is on publics, scientists and policy makers exploring and debating issues, aspirations and concerns together, rather than one-way communication with publics or seeking acceptance for preconceived ways of doing things. In an important sense dialogue is about enabling publics to express their views and reasoning about a topic and this includes the capacity to actively challenge and transform the terms of a debate.
- The dialogue was led by the Centre for Rural Policy Research, University of Exeter, and delivered with the facilitation assistance of Hopkins Van Mill: Creating Connections. The dialogue was evaluated independently by 3KQ.

Approach to dialogue

- The dialogue involved a cross section of the general public scrutinising the concepts and findings of the NEA with specialists, including policy and practice stakeholders, and wider academic researchers. Unlike quantitative and extensive social research methodologies, where the focus is on gathering broad and representative understandings of how people think about an issue, for instance by putting a schedule of closed questions to participants, dialogue brings together an illustrative sample of the public into a sustained process of discussion around which patterns of group and individual reasoning can be identified.
- In total there were 118 members of the public who participated in this process, and 341 person days committed. There was strong retention of participants throughout the process. Against the general standards of this methodology, this was a significant public dialogue, and the largest of its kind undertaken by Sciencewise. Participants in the process were recruited to ensure a broad demographic in terms of gender, age, educational attainment, ethnicity, rural and urban populations and environmental attitudes and depths of environmental knowledge.
- Nine one-day events were held across three locations: Birmingham, Exeter and Glasgow, with a one and a half day finale event in London involving a subsection of 34 invited participants from the earlier dialogue events (with more than double that number expressing interest in participating). In total, 43 specialists attended and participated in the overall dialogue process. These included representatives from national and local government, policy delivery bodies, non-governmental organisations and academics and encompassed a range of different views and skills within, and with respect to, the work of the NEA.
- The project delivered the process using a mixture of stimuli: presentations, visual aids and written texts, including data, maps, cartoons and animations. A record of proceedings was provided in the form of audio recordings, flip charts, posters, postcards, questionnaires and blogging. All discussions were recorded and transcribed in full, and coded and analysed against key dialogue themes and emerging areas of discussion.

How do ecosystems resonate as important to people?

- Participants in the dialogue drew an unambiguous and fundamental connection between the natural environment and human well-being. People were considered to be dependent upon the natural environment for a range of health, cultural and economic benefits, specifically:
    - Escape and freedom: places where people can get away from work and feel free from constraint;
    - Valued social interactions: places that enable interactions between friends and family and community;
    - Physical and mental health: places for physical exercise and achieving inner peace and mental calm;
    - Tangible and intangible cultural heritage: places for reconnecting people to their pasts and sustainable models of living.
    - Education and learning: places of instruction and where imagination, wonder and interest in life is triggered;
    - Economic productivity: places that support industries and livelihoods, and provide materials that underpin human infrastructures.
- In general, the cultural and health dimensions of human interactions with nature were most prominent in the dialogue. Alongside these benefits participants also understood the natural environment as a physical power that could threaten and overwhelm human livelihoods.

What do people think about the concept and framework of ecosystem services?

- At the outset of dialogue participants were generally pessimistic about the future of their local natural environments and ambivalent about whether progress was being made on current and emerging environmental risks and challenges. They were therefore generally encouraged to learn that an assessment of the scope and ambition of the NEA had been commissioned by government. They perceived the NEA as providing an authoritative, though quickly dating, scientific evidence base and felt its findings should be considered by policy and decision makers.
- Overall, participants adapted to NEA concepts very quickly and demonstrated a mastery of terms and ideas in a short period of time. They reacted cautiously to the NEA's framework and concept of ecosystem services but tended to be more positive about the framework's utility the more they used and applied it, for instance, within the context of the Ecosystem Approach. People discerned and enjoyed the 'puzzle' element encouraged by the framework and the recognition that decisions are rarely black and white.
- Participants were particularly supportive of the framework's holistic and inter-connected view of the environment and its recognition of complexity. Breaking issues down into a set of categories (provisioning, regulating, supporting and cultural) was felt to be a helpful way of encouraging systematic thinking. In general, the NEA was viewed by participants as a resource for learning and thinking about the natural environment in new ways. For many, the NEA's approach served to challenge preconceived wisdoms about what was considered the remit of the environmental agenda. It encouraged expansive thinking about human dependencies on the environment and was felt to help people make connections between personal behaviour and larger, often global, environmental issues.
- In general, the categories of ecosystem service that resonated most strongly with participants were cultural and provisioning services. Cultural services were frequently singled out by participants as an indication of the framework's holistic outlook, while the logic of provisioning services was well understood and articulated by participants who saw the strong connection between environmental processes and economic prosperity.

Table E.1. Viewpoints on the concept and framework of ecosystem services

KEY STRENGTHS AND OPPORTUNITIES	KEY WEAKNESSES AND CONCERNS
Expansive. Challenges assumptions about what environmental issues are all about.	*Jargon.* Terminology too specialist and obscure for general public consumption.
Holistic. Covers all the issues and brings everything together in one systematic framework.	*Bureaucratic.* Rather 'tick boxy' and clinical in outlook. Not very flexible.
Complex. Helps recognise how everything is connected and that decisions are not black and white.	*Consumerist.* Language and framework very much about what people 'get' rather than 'put' back in.

- Participants found the categories of regulating and supporting services less self-explanatory. Supporting services were appreciated by participants as important because their definition captured the idea of human dependencies on a deeper, more fundamental, nature. Participants understood this category as embracing all background processes of nature and were perplexed why specific examples of regulating services belonged in a separate category to that of supporting services. In addition, the regulating services category tended to be equated with the practice of regulation, as in governance and law making, but also the practical act of management. Participants were also sceptical of how well supporting services could be addressed in decision making.

- Participants believed that ecosystem services terminology should be used with caution if the purpose is to: promote general awareness of environmental issues and challenges among society; convey what government is doing about the environment; or more specifically, to involve wider publics in ecosystem service-based decision making. The language was considered too technical and specialist overall and would require explanation and context to be understood.

- A significant minority of participants were sceptical about advancing the use of the term 'services' to describe human relationships with nature. These participants worried about the long term implications of this way of thinking, expressing concern that people would end up paying for things they have currently have the right to access and use freely. They also expressed concern that human responsibilities and duties of care towards nature are obscured by the concept of services and there is a need to bring this aspect out more explicitly if developing policy and decisions around this framework. Some also felt the framework may lead to a rather bureaucratic and 'tick boxy' approach to the management of natural resources.

How can the concept and framework of ecosystem services inform good decision making?

A number of key messages emerged from the dialogue about the way participants characterised good decision making and how the ecosystem services framework might inform this. In general, from very early on in discussion the framework was viewed as inviting a daunting level of complexity and that decision makers faced an unenviable task, not only in understanding the complex interactions between ecosystem services and value systems in decision making, but also in how to build in appropriate safeguards for nature. More specifically, participants emphasised the need to:

- *Prioritise the long term public benefit over short term economic interests.* It was common for participants to question the motivations and interests that lay behind the need to take decisions. They asked persistently on what grounds change is presumed necessary. They emphasised that actions should offer a long term public gain, and this meant prioritising the protection of nature within decision making. They saw risks in decision making being driven by financial concerns and involving commercial interests and were concerned that rights to access fundamental public goods from nature would be jeopardised by short term interests in profit.

- *Utilise scientific evidence to help inform decisions.* Participants viewed expert science as a way of helping to rationalise the challenge of dealing with complex and uncertain problems. This included informing understanding of why certain ecosystem services would be prioritised over others, and clarifying the otherwise hidden knock-on effects of actions. They wanted scientific information to be transparent in its methods, and independent, rather than wedded to a particular interest group. They did not believe formal scientific expertise alone can solve the rights and wrong of

decisions. They saw this expertise as contributing to a wider body of knowledge and emphasised the need for pluralistic forms of evidence that can deal with decision making complexities.

- *Involve the wider public in decision making.* Participants highlighted the involvement of local communities and beneficiaries as an important condition of good decision making. There was a need to look beyond scientific research findings and expert knowledge, and to avoid over-reliance on decisions being taken from above and at a distance. They argued that local publics have the right to be involved in decision making process across the full range of services and that they bring knowledge and innovation to the way decisions are made and actions framed.

Table E.2 Ecosystem services and decision making: views on the Ecosystem Approach

KEY STRENGTHS AND OPPORTUNITIES	
Positivity, inclusivity	The environment is being presented in a less 'doom and gloom' way; conveys to people that positive change is happening.
	Shows that environment is relevant to all sectors and walks of life.
	Everyone is being encouraged to have a view and a role in decision making.
Holistic in outlook and approach	Decision makers are thinking strategically. Approach tries to take all issues into account & evaluate the trade-offs; less fragmented.
	Recognises that money should not be the only thing driving decisions.
	Cultural aspects can provide an important counterweight in decisions.
Practical advantages	Principles connect framework to a set of clear principles for actions.
	Promotes transparency and accountability & strengthens the environmental case by providing a clear reference point for evidence.
	Potential to open up new revenue streams for protecting environment.
Good outcomes for nature	Emphasises more natural solutions/encourages natural methods.
	Will help to ensure that negative actions are offset by good ones.
	Opens up possibilities for win-win situations and synergistic benefits.
KEY RISKS AND CHALLENGES	
Fostering awareness and engagement	Approach may only be picked up on by 'switched on' stakeholders.
	Stakeholders and publics may find it hard to grasp the overall point and rally around it.
	People may object to some of the valuation instruments being applied, and see the Approach as an exercise in giving public money to wealthy land managers.
Creating a credible evidence base	Scope of approach means it is difficult to maintain an up-to-date evidence base.
	Sheer complexity of issues may lead applications of Approach to 'cherry pick' services.
	Salient local knowledge may be lost in the quest for standardised evidence.
Implementing and achieving goals	Complexity of issues being assessed may impede clear aims and purposes being set.
	Applications may be overruled, derailed, diluted or slowed down through ignorance or competing interests.
	May encourage congested decision making leading to co-ordination problems and duplication of effort.
Future-proofing activities	Difficult to maintain long term commitments to project goals as interests, priorities and land ownership changes.
	Challenge to ensure outcomes are properly monitored, adhering to agreed practices.
	The bill for ensuring future maintenance may fall on local tax payers.

- *Build in appropriate regulation and monitoring.* Participants were concerned that interventions should be properly regulated and monitored, and viewed the state as playing an important oversight role to ensure actions conform to agreed standards and that commitments are carried through. They tended to imagine scenarios in which independent bodies, set up by government, assert control over processes, particularly where significant commercial interests were involved. There is a related role for third sector actors in managing and informing new arrangements for ecosystem services delivery, such as 'payments for ecosystem service' schemes.

In general, the characteristics that participants associated with good decision making are consistent with the principles of the Ecosystem Approach which were emphasised later in the dialogue during discussion of recent and current projects applying this concept and framework to decision making. The key messages coming out of these discussions are summarised in Table E.2. The table highlights a number of key strengths, including the potential to foster awareness that might arise from applying this thinking, but also risks and potential challenges.

What is the place of monetary and non-monetary approaches to the valuation of ecosystem services?

- Overall, participants saw many ways in which valuation techniques might be helpful within policy and decision making processes, but also queried how valuation evidence is created, what it signifies and what it can be expected to do. Participant views on the use of valuation methods had political, ethical and tactical dimensions and were often sensitive to the scale and object of decision making. In particular, there were notable differences about the rationale and need for different types of valuation in terms of the perceived uncertainty and complexity of a decision issue and whether the issue is of national and local concern.

- Although many participants expressed concern about associating nature with monetary measures of value, monetary valuation techniques were considered generally important tools for communicating and thinking about values within decision making; a tactically useful thing to do in terms of: communicating up – pushing nature up political agendas and unlocking treasury budgets; and communicating out – making nature's value clear at a broad societal level.

- The generic qualities of monetisation methodologies appealed strongly to participants. Monetary valuation evidence was generally viewed positively because it is quantitative in form and provides information in a tangible, logical and uniform format. They felt these qualities lends the monetary approach transparency, objectivity and clarity even if the assumptions behind the specific application of the techniques might be questioned.

- Participants generally put more conditions on valuation evidence the 'closer to home' the decision gets (more personal and proximate), and the more risks and uncertainties the decision seemed to be addressing, with monetary valuation often interpreted as a necessary, but not sufficient, basis for decision making. Participants expressed a logic that is in many respects analogous with the 'balance sheet' approach to decision making outlined in the National Ecosystem Assessment. Recurring examples where monetary valuation would not be enough included: the building of new homes; building new airport runways; building new rail links; siting landfills and waste incineration units in neighbourhoods; and adapting to local flood risks. There will often be a need to put valuation on a participatory and qualitative footing so it is sensitive to the cultural and historical context, to appraise decisions from an ethical point of view (rights and wrongs; winner and losers), as well as to test abstract facts with stories and interpretations.

- Overall, there was a very strong message of the need for pluralistic approaches to valuation at all levels of decision making. Participants wanted approaches that produce systematic and precise forms of valuation evidence, but also acknowledge and incorporate complexity. They wanted valuation exercises that are open about underlying assumptions and weaknesses, and realistic in their claims and ambitions. Above all, participants suggested that valuation exercises should not stand and fall on one valuation approach alone. Monetary and non-monetary approaches to valuation are viewed as complementing each other in terms of their respective strengths and weaknesses. Participants suggested different ways in which these approaches could be usefully coupled together as part of iterative valuation processes within decision making.

Who should deliver and pay for ecosystem services at the local level?

- The principles and practice of payments for ecosystem services (PES) schemes were evaluated as a way of managing and delivering ecosystem services at the local level. Participants considered hypothetical examples addressing a range of ecosystem services and vehicles and models of payment.
- In general, participants responded well to the idea of the 'beneficiary pays'. They liked the focus on rewarding and encouraging positive behaviour, although participants frequently returned to the idea of the 'polluter pays' in order to emphasise that poor environmental practices should be penalised.
- Many participants spoke of ecosystem services delivery in terms of obligations and commitments and worried that the PES agenda sounded too voluntaristic and market orientated in outlook. Some also suggested that the language of 'payment' does not capture the need for a wider and long term commitment to environmental ends and many agreed that the alternative term 'investment' would be more appropriate.
- In terms of who pays for ecosystem services at the local level, participants suggested that:
    - Small financial contributions by national government are symbolically important since they convey that government is aware, committed to, and influencing these activities;
    - Local businesses directly or indirectly gain financially from a high quality natural environment and should be expected to contribute towards PES schemes;
    - There is a case for residents and visitors contributing to PES schemes that support the provision of local amenity benefits and there are virtues (and weaknesses) of both voluntary and mandated forms of payment;
    - It is a matter of concern that local consumers may end up footing the bill for activities that are the responsibility of business and their shareholders.
- In terms of the co-ordination and implementation of local PES schemes, participants overwhelmingly associated desirable scheme design and implementation with the involvement of third sector organisations with locally specific environmental remits. These types of organisations were perceived to have the 'right' outlook, ideas and values. Schemes co-ordinated by entities with commercial interests were viewed with suspicion.
- Participants were generally concerned that money might actually be lost within complex intermediary processes. The need to ensure that the administration of schemes is not resource intensive was considered important, otherwise people might be charged more for the same ecosystem services, or less might be provided for the same price.
- An important condition participants placed on payment for ecosystem service schemes was the need for clarity about what the money is used for. Some expressed concerns that PES schemes are in general directed towards activities that are difficult to monitor in practice.

Table E.3. Taking the agenda forward: What might a good future look like?

KNOWLEDGE AND GOVERNANCE
• There is investment in long term environmental science and technology research programmes. • Publically funded institutions with core environmental competencies are operating beyond short term political cycles.
• Local knowledge and perspectives inform the complex evidence needs of the Ecosystem Approach, through innovative programmes of citizen science.
• A national 'Ecosystems Agency' is set up to co-ordinate and integrate approaches and demonstrate good practice.
• Approaches that recognise and reward ecosystem service provision are encouraged, but there are regulatory mechanisms and penalties for poor environmental practice.
• Third sector organisations with locally specific environmental remits (such as local wildlife and river trusts) are helping to mediate and assure local innovations.
• Influential local stakeholders, such as elected local officials controlling budgets and local planners, understand and appreciate the value of sustaining ecosystem services.
COMMUNICATION AND UNDERSTANDING
• The language of ecosystem services is simplified to engage people but not at the expense of embracing the overall complexity of an ecosystem services perspective.
• Ecosystem services thinking is branded and kite-marked so that people have an identifiable rallying point around which models of behaviour can be influenced, such as assuring and differentiating products.
• The mass media is actively used to promote awareness and understanding, such as ecosystem-based soap operas (e. g. 'salty-street') and ecosystem informed storylines.
• The language of economics is employed to influence and raise national levels of consciousness about the value of ecosystems and influence powerful stakeholders, but money is not the sole currency of decision making.
CITIZENSHIP AND INVOLVEMENT
• Duties and responsibilities to nature are promoted as part of an ecosystem services perspective to decision making.
• Micro affiliations with place are used as a catalyst for local engagement and behaviour change (such as the 'love your place' initiative).
• People are obliged and rewarded in their commitments to ecosystems, for instance through a designated 'National Volunteering Bank Holiday'.
• Technology and social media is harnessed to involve people. Apps are developed that allow people to contribute, and crowd fund, opportunities for ecosystem service delivery and monitor progress.

What do people think about the future of UK ecosystems?

- Participants considered the long term future of UK ecosystems in terms of key emerging risks, challenges and opportunities. Four NEA scenarios were used as a provocation for debate. Participants also created their own visions of the future for UK habitats and how these might be realised.

- Participants took a favourable view of scenarios that promoted management of the natural environment in terms of its multi-functionality and the provision of ecosystem services. Maintaining the natural environment in terms of its cultural and wider quality of life value was considered an important element. Scenarios that combined strong roles for state and civil society, and invested in technology were also generally favoured. Conversely, there was a very strong negative reaction to scenarios where markets reigned freely, or where national self-sufficiency narratives predominated.

- Visions of the future produced by the participants reinforced and extended themes discussed in the context of scenarios. Participants emphasised desirable futures in terms of: multifunctional uses of the environment; social values cohering around care for the environment; active participation of communities in decision making; pluralistic forms of evidence to inform management; a strong leadership role played by government; and sustainable landscapes aligned to technologies.

- In terms of key areas for action in realising desirable futures four key themes emerged:
    - The need to develop a strong evidence base, built around publically funded investments in science and augmented by the inclusion of wider lay expertise;
    - The need to shape social attitudes through programmes of education and media campaigns to raise awareness, create shared visions and provoke action;
    - The need to develop novel funding streams to finance pathways to environmentally sustainable futures, and to penalise and incentivise behaviour through the market and state.
    - The need to innovate and invest in technologies to mitigate environmental harm and promote efficiencies in how resources are utilised.
- The overall picture that emerges is an understanding of future ecosystems and their management that shares many of the characteristics and arguments of the NEA's underpinning philosophy.

Conclusions

- At the outset of the dialogue participants articulated many and diverse ways in which the natural environment might be important for individuals and society, but they were also pessimistic about their local environmental futures.
- Our participants varied significantly in their stated awareness, interest and knowledge of environment issues. Yet many saw decision making in the planning of local environmental assets as piecemeal and short-sighted, and ill-equipped or unprepared to respond to the big environmental issues e.g. building more homes, mitigating flood risks, protecting urban green space, securing energy resources, feeding a growing population, and ultimately, protecting nature as a life-affirming and life-enriching resource.
- It was against this backdrop that the NEA was introduced, discussed and accrued significance. At its most positive, some participants suggested the Assessment might serve as a modern day and environmental equivalent of the Beveridge Report, around which publics should be encouraged to rally. Participants offered a range of critical and imaginative suggestions for taking this agenda forward (Table E.3).
- Ecosystem services and the Ecosystem Approach are not considered panaceas for heading off future risks, meeting challenges and building sustainable futures. Yet this dialogue shows that elements of the NEA logic and its findings have resonance with public aspirations and concerns for credible policy development with respect to the natural environment.

INTRODUCING THE NEA DIALOGUE

Dialogue Cartoons by Luke Warm

CHAPTER 1. BACKGROUND AND APPROACH

Summary

- The purpose of the *'Naturally Speaking…'* public dialogue was to open up the concepts and findings of the UK National Ecosystem Assessment (NEA) to public debate and scrutiny as the basis for informing applications of this assessment work within environmental policy and practice.
- The dialogue was run in partnership with the Natural Environmental Research Council (NERC), the Department for Environment, Food and Rural Affairs (DEFRA), and Sciencewise, the UK's national centre for public dialogue in policy making involving science and technology issues. The dialogue was led by the Centre for Rural Policy Research (CRPR), University of Exeter and delivered with the facilitation assistance of Hopkins Van Mill: Creating Connections.
- The dialogue took place during 2014 and involved a cross section of the general public interacting with a number of specialists from different backgrounds: 118 public participants and 43 researchers and policy and practice representatives worked together at nine one-day events held across three locations: Birmingham, Exeter and Glasgow and a one-and-a-half day finale event held in London.
- The project delivered the process using a mixture of stimuli: presentations, visual aids and written texts, including data, maps, cartoons and animations. A record of proceedings was provided in the form of audio recordings, flip charts, posters, postcards, questionnaires and blogging.

1.1 Introduction

The UK National Ecosystem Assessment (NEA) published in 2011, drew together a wealth of scientific evidence on the character, causes and consequences of ecosystem change in the UK. This included an assessment of change across broad habitat types, including woodland, enclosed farmland, freshwater habitats, mountains and moorland, and in the context of a range of 'ecosystem services' that underpin human well-being, including water quality, food, energy and recreation. The findings of the NEA played an influential role in policy development for the environment, with many of the conclusions of the NEA reflected in the commitments of the 2011 Natural Environment White Paper (Defra, 2011).

The NEA identified a number of key uncertainties in terms of the comprehensiveness of its evidence base and the mechanisms and means by which NEA science can be translated into policy and decision making. The Government therefore committed to adding to its knowledge base by supporting a two-year NEA follow-on (NEAFO). This second phase, which reported in spring 2014, further developed and promoted the arguments put forward by the UK NEA, refined and added precision to core concepts, and developed tools that could further advance uptake of ecosystem thinking within a range of policy and decision making contexts across the UK.

The work of the NEA belongs to a growing area of scientific advocacy for the environment harmonising around the concepts of natural capital and ecosystem services, and promoted more broadly alongside an 'Ecosystem Approach' to decision making. This approach calls essentially for a 'systems' approach to ecosystem management, one built on pluralistic valuation of ecosystem services and stakeholder and public involvement in decision making[1]. Although this approach to the natural environment has become increasingly normalised across the research and policy and practice community,[2] little is known about how the NEA's work reflects wider public aspirations and concerns about the natural environment and how it is valued and managed. The purpose of this public dialogue project was therefore to open up the methods, analyses and findings of the NEA process to public scrutiny: inspecting and testing its assumptions; highlighting potential areas of public sensitivity and concern and offering public insight into the ways in which NEA thinking might help inform credible policy and practice toward the environment.

The dialogue was run in partnership with Defra, NERC and Sciencewise[3], the UK's national centre for public dialogue in policy making involving science and technology issues. Its work more generally reflects the ambitions of the government's *Open Policy Making*[4] agenda: that is, being open to new ideas, ways of working, evidence and expertise, including the insights of citizens without formal

[1] http://www.cbd.int/
[2] See http://ecosystemsknowledge.net/
[3] http://www.sciencewise-erc.org.uk/
[4] https://openpolicy.blog.gov.uk/

Box 1.1 Note on terms and concepts

During this process we used the following key terms/definitions:

Ecosystem services – the contributions that ecosystems make to human well-being.

Ecosystem services framework – the general conceptualisation of ecosystem services into a series of distinctive category, specifically

- *Provisioning services:* the products obtained from ecosystems, including food, fibre, fuel, genetic resources and fresh water;
- *Regulating services:* the maintaining functions of ecosystem processes, including regulation of air quality, climate, water quality and natural hazards
- *Cultural services:* the contributions ecosystems make to processes of life enrichment, such as cultural identity, cognitive development and aesthetic experience and;
- *Supporting services:* services that maintain the integrity, resilience and functioning of ecosystems and therefore underpin the production of all other ecosystem services, such as soil formation, photosynthesis, primary production and water cycling.

Ecosystem Assessment – the process of describing and analysing states and trends in ecosystem service provision.

Ecosystem Approach – the practice of applying the concept and framework of ecosystem services to decision making according to the principles of the Convention on Biological Diversity. This includes encouraging inclusivity and cross-sectorality in decision-making, and promoting adaptive management and local solutions, as well as ensuring that both the market and non-market value of ecosystem services are fully accounted for in policy, plan and project design.

Ecosystem Assessment and the Ecosystem Approach are mutually reinforcing contexts for the promotion of ecosystems services in decision-making: the former rooted in broad science-informed advocacy of the natural environment; the latter in the methods and mind-sets of policy delivery and practical decision making

roles and responsibilities in specific areas of policy making. This commitment to dialogue extends to the strategic priorities of Research Councils UK, specifically reflecting its *Concordat for Engaging the Public with Research* and its commitment to research impact, to add value and benefit to policy informing research and to augment its impact with respect to issues of public interest and concern.

1.2 Scope of dialogue

The scope of the dialogue was developed with the advice of a project oversight group and within the context of the objectives of the overall project business case. In particular, the dialogue addresses three key topics:

- **The NEA's characterisation of the natural environment**
  The dialogue considers whether the guiding logic of the NEA resonates with publics in terms of its characterisation of the natural environment (e.g. ecosystems representing 'natural capital' that provide a flow of 'services' influencing human well-being) and how it is understood to be changing for the better or worse, (e.g. in terms of the changing provision of ecosystem services at the national and local levels). In addressing these concerns the public dialogue provides understanding of the extent to which the concept and framework of 'ecosystem services' can be expected to build public confidence in policy and practice commitments to the natural environment based on NEA thinking, and how these commitments might be best communicated and taken forward. (see Box 1.1)
- **Applications of NEA concepts and arguments to decision making**
  Set within the NEA's broad advocacy of the Ecosystem Approach to decision making, the dialogue considers

practical applications of NEA thinking to reflect on what constitutes acceptable, necessary, practical and accountable approaches to ecosystem management. Within this, the dialogue gives specific consideration to a range of salient NEA concerns including: the legitimacy of valuation agendas and approaches; the presumption of broad and deep stakeholder and public involvement in environmental decision making; and the emergence of market-based mechanisms for securing sustainable management of ecosystems at the local level (specifically 'payment for ecosystem services' [PES] schemes). The dialogue considers how challenges and sensitivities arising out of the development and practical application of an ecosystems approach might be minimised and overcome.

- **Evaluating NEA futures and response options** The dialogue explores how publics think about the future of UK ecosystems. By exploring the plausibility and desirability of NEA scenarios the dialogue explores the long term trends, issues, risks and uncertainties anticipated by publics and what types of arrangements and interventions will be necessary to act upon and secure ecosystem futures in a desirable way. This includes specific consideration and evaluation of the NEA's framework of: foundational responses (generating and distributing new knowledge), enabling responses (developing legislation, policies and governance arrangements) and instrumental responses (incentivising behaviour of individuals and organisations).

1.3 Approach to dialogue

The project addresses these areas by following closely the guiding principles of public dialogue set out by Sciencewise (2013)[5]. The project is distinguished by interactions between publics and specialists, that is, between publics and those with interests in the policy development, scientific basis or implementation aspects of the dialogue topic. While the 'spotlight' of dialogue remained first and foremost on the contribution of 'public' participants, the dialogue welcomed and encouraged the participation of specialists.

Dialogue is designed to promote open, informed and above all, critical, public engagement with innovations at the interface of science, policy and practice. Dialogue works on the assumption that, provided with the relevant information, publics can shed new and important light on whether and how innovation in science and technology might be proposed and taken forward in policy.

Although there is a consultative element to dialogue in terms of questions and concerns that structure discussion, the dialogue process presented here is not an elaborate group interview or 'focus group' process. The emphasis is not on one-way communication with the public or seeking acceptance for preconceived ways of doing things, but rather on publics, scientists and policy makers exploring and debating issues, aspirations and concerns together. Dialogue is about enabling publics to express their views and reasoning about a topic and this includes being able to challenge and transform the terms of a debate.

Box 1.2 Dialogue Events (2014)

Stage 1 – Regional Events

Our changing ecosystems
- Exeter – 29th March
- Birmingham – 5th April
- Glasgow – 26th April

Managing our ecosystems
- Exeter – 10th May
- Birmingham – 17th May
- Glasgow – 31st May

The challenge for decision makers
- Exeter – 7th June
- Birmingham – 14th June
- Glasgow – 21st June

Stage 2 – National Event

Valuing Nature
- London 30th September

Assigning roles and responsibilities
- London 1st October

1.4 The dialogue events

The dialogue took place during 2014 and was divided in to two key stages. First, one-day regional dialogue events were held in Birmingham, Exeter and Glasgow on three separate occasions in each location between March and June (i.e. 9 dialogue events in total; see Box 1.2), at which participants and specialists explored and discussed the three

[5] http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Publications/Sciencewise-Guiding-PrinciplesEF12-Nov-13.pdf

key areas of dialogue. The locations were chosen to capture different regional contexts.

Second, a national dialogue event was held in London over one-and-a-half days where a subsection of participants from each regional dialogue explored aspects of NEA thinking in further detail and drew out salient findings and messages to shape the final messages of the dialogue. Details of the recruitment and participation in this dialogue are provided below.

The process centred on facilitated small group discussion delivered by the project team in conjunction with independent professional facilitators.

A range of stimulus materials – presentations, electronic polling, visual and written texts, including data and maps as well as cartoons and animations – were used in the process, examples of which are included in several places in this report. Significantly the process benefited from the contribution of NEA and other specialists, who held a range of views on the dialogue topic, acting as observers or participants. (see section 'Participants in the dialogue' and Tables 1.3 & 1. 4).

The project team kept a full record of proceedings in the form of audio recordings, flip charts, posters, postcards, questionnaires and blogging. This has been supplemented by the video recording of the process which has formed the basis for a dialogue video[6].

1.4.1 Stage 1- Regional dialogue events – Birmingham, Exeter and Glasgow

In stage 1 of the dialogue each 'round' of dialogue followed a consistent process design between groups and locations, although the dialogue stimuli and participating specialists varied to reflect the regional specificity of each event. Moreover, an important design feature of the first stage of dialogue was keeping participants in the same discussion group over the course of the three events and building group specialism around habitats. Thus, in each of the locations we divided participants into four socio-demographically mixed groups of up to 10 people to consider issues relating to:

- Upland landscapes – moorlands, heaths and semi-natural grasslands;
- Enclosed farmlands and managed woodlands;
- Urban/urban fringe – including freshwater habitats;
- Coastal margins and marine environment.

This continuity of theme was further reinforced by continuity in the facilitation. Most groups had the same facilitator throughout the process so there was a strong sense of accumulating knowledge about quite precise areas of ecosystem management. In general, the events closely mirrored the three thematic areas of the dialogue, as follows:

- **Dialogue Round 1. Exploring our changing ecosystems**
  The first round of dialogue events introduced participants to the concepts and framework of ecosystem services, and more generally familiarised participants with the work and findings of the NEA. The process involved eliciting participant reactions to images depicting local examples of NEA broad habitats and asking them to speculate on what these environments might do for individuals and communities. The process was designed to allow participants to discover the concept of ecosystem services in their own terms. Over the course of the event participants were then introduced to the NEA and probed on how the concept of ecosystem services resonated with the own views of the natural world. Participants then applied the framework to a hypothetical catchment system where a number of decision issues and management options had to be addressed: producing more food from land and sea; cleaning up water; and building more homes.

- **Dialogue Round 2. Managing our ecosystems**
  The second round of events moved from the conceptual and general to the practical and specific. It used real world case studies to evaluate how the ecosystem services framework has been applied, or is planned to be applied, in particular arenas of ecosystem management. Examples were chosen that were relevant to locality but also flagged up as exemplars in the policy literature and NEA[7]. Discussion was structured around exploring and discussing project aims, assumptions and models of working and the examples were used to stimulate debate about the wider issues and challenges arising from applying ecosystems services thinking in practice, specifically with reference to the principles of the Ecosystem Approach. The case studies tackled a number of habitat contexts (upland, lowland, urban/urban fringe and the coastal/marine environment).

[6] http://www.sciencewise-erc.org.uk/cms/dialogue-project-videos/
[7] Although the dialogue team also consciously chose counter-intuitive examples, such as the Birmingham public considering marine spatial planning.

- **Dialogue Round 3. Shaping the future: the challenge for decision makers**
  The third dialogue event focused on strategic and long term concerns. It introduced participants to the NEA scenarios with discussion specifically exploring public impressions of four of these futures: Green and Pleasant Land; World Markets; Nature@work and; National Security. Participants were asked to consider these scenarios on the grounds of probability and preferability. Within this participants were asked to think about their preferred vision for the future (2060) and to consider how this vision could be achieved using the NEA's framework of foundational, instrumental and enabling responses. Again, participants explored and contextualised the NEA's framework based on the four broad environments: upland landscapes, agricultural and managed woodlands landscapes, urban/urban fringe, and marine and costal environments. Discussion elicited public assessments of the types of interventions and actions society should take to shape more sustainable futures and what factors foster or impede these.

1.4.2 Stage 2 – National Dialogue Event – London

The second stage of the dialogue reconvened a subsample of participants at a one-and-a-half day event to discuss and evaluate further some of the implications of the NEA for policy development and decision making. This event, which took place at the Royal Society in London, consolidated and extended the findings of the dialogue by specifically addressing two key issues: first, whether and in what contexts valuation provides an acceptable basis for making decisions about the natural environment, and second, assigning roles and responsibilities in managing the natural environment.

- **Dialogue Round 4 – Valuing our natural environment**
  The dialogue used practical valuation examples to explore whether and how public assessments and perceptions of 'good' decision making about the natural environment: are reinforced, challenged or transformed by different approaches to the valuation of natural environment and ecosystem services; require the use of particular types and mixes of valuation analyses; or rely on approaches to decision making that are contrary or counterpointed to the valuation approaches. In pursuing these concerns an important feature of the dialogue was to consider: how views on valuation vary according to the scales of decision making (e.g. national and local decisions); who creates and owns valuation evidence (e.g. Government, business or researchers); the focus of valuation (e.g. how views may vary according different ecosystem services or habitat types); and ethical considerations (e.g. rights of nature).

- **Dialogue Round 5 – Assigning roles and responsibilities**
  Again, drawing on practical examples the dialogue explored in what ways, and to what extent, implementing the Ecosystem Approach in local contexts should: promote and enable the development of market-based mechanisms to reward and finance sustainable behaviours and practices and how government and wider civil society actors might assume particular roles and responsibilities in relation to these potential developments. Understanding how reasoning varies according to context was again important in this dialogue, such as variation according to the type of market-based mechanism, the scale of management, and problem focus.

1.4.3 Participants in the dialogue

Unlike quantitative and extensive social research methodologies, where the focus is on gathering broad and representative understanding of how people think about an issue, for instance by putting a schedule of closed questions to people, dialogue brings together a cross section of the public into a sustained process of discussion, through which patterns of group and individual reasoning can be identified.

Public participants were recruited to events to ensure an illustrative cross section of publics participated in terms of age, gender, occupation, ethnicity, and rural and urban backgrounds, as well as levels of self-reported awareness and interest in environmental issues. In this last respect it is important to view the findings in the context of a good cross-section of stated environmental knowledge and investments. Over 40 per cent of participants suggested they had little or no understanding of environmental issues and over 50 per cent suggested they did not follow environmental debates in the media or only did so in a limited way. There were no known active affiliations to environmental organisations and no participant had been involved in the area of ecosystem service research and policy delivery (see Table 1.1).

A market research company was commissioned to recruit and incentivise participants. The target was 40 public participants in each location attending each of the three events (i.e. a target of 120 public participants in total; with

Table 1.1 Stage 1. Public Participation – Demographic Profile

AGE DISTRIBUTION	
18-25 years	23 %
26-45 years	28 %
46-65 years	22 %
>65 years	27 %

GENDER	
Male	50.5 %
Female	49.5 %

SOCIAL GRADE	
B	20 %
C1	37%
C2	15 %
D	11 %
E	15 %
AB	2 %

PLACE OF RESIDENCE	
Urban area	28 %
Urban by the coast	4 %
Semi-urban area	51 %
Rural	15 %
Rural by the coast	2 %

ETHNICITY*	
White British	81 %
African	3 %
Asian (Bangladeshi, Indian, Pakistani)	9 %
Caribbean	2 %
Other Ethnic background (Irish, Greek, Polish)	5 %

QUALIFICATIONS	
None	20 %
Compulsory	16 %
Post-compulsory /further education	40 %
Higher	21 %
Postgrads	3 %

HARD TO REACH SOCIAL GROUP**	
Elderly	11 %
Deprived	8 %
Geographically Isolated	4 %
Socially isolated	5 %
None of these	72 %

LIFE STAGE***	
Empty nester	33 %
No dependents	19 %
Older family	11 %
Pre-family	22 %
Young family	15 %

DO YOU WORK FOR ANY ORGANISATIONS OR INSTITUTIONS UNDERTAKING RESEARCH OR POLICY IMPLEMENTATIONS BASED ON THE ECOSYSTEM SERVICE FRAMEWORK?	
Yes	–
No	100 %

ARE YOU AN ACTIVE MEMBER OF ANY OF THE FOLLOWING?	
Environmental Groups	–
NGOs (non-governmental organisations)	–
None of these	100 %

ON A SCALE OF 1-5, TO WHAT EXTENT DO YOU HAVE KNOWLEDGE OF ENVIRONMENTAL ISSUES? 1 = no knowledge & 5 = extensive knowledge	
1	5 %
2	37 %
3	38 %
4	16 %
5	4 %

ON A SCALE OF 1-5, TO WHAT EXTENT DO YOU FOLLOW ENVIRONMENTAL DEBATES IN THE MEDIA? 1 = not followed at all & 5 = closely followed	
1	22 %
2	33 %
3	29 %
4	13 %
5	3 %

*Participants self-described themselves by answering the question: *'How would you describe your ethnicity?'*

**Where: *Elderly* = people over 65 that were more frail than other people their age (e.g. had home help or a carer); *Deprived* = people on benefits or a particularly low income or with health issues that limit capacity to work; *Geographically isolated* = people who live out of a city, town, village or hamlet in remote rural areas; *Socially isolated* = people who stated that they have no family and felt isolated within their local community.

***Where: *Empty Nester* = children left home; *No Dependents* = never had children; *Older Family* = children aged 11-18; *Pre-Family* = No children yet; *Young Family* = children aged 0-11.

360 public days committed overall). The final numbers attending the first phase of dialogue are provided in Table 1.2. In total 118 people attended all or part of the dialogue and 341 public participant days were committed overall. Against the general standards of this methodology, this was a significant public dialogue, and one of the largest of its kind undertaken by Sciencewise. There was strong retention of participants throughout the process. Birmingham was the strongest in terms of recruitment and retention (40 participants recruited attended all three events).

The process also benefited from the participation of a wide range of specialists, including NEA scientists, social scientists and representatives of policy delivery bodies and NGOs (Tables 1.3 & 1.4). In total 42 specialists days were committed to the process (Target= 36).

1.5 Approach to data preparation and analysis

In this dialogue all group discussions were recorded and transcribed in full by an independent transcription company. All transcripts were then checked for their veracity against original audio files. Written records from discussion groups were summarised and converted to Word files. Electronic and written questionnaires were converted into spreadsheet documents.

The transcripts were reviewed and coded, and grouped against dialogue themes using qualitative data analysis software (Nvivo) or manually. An illustrative/non-exhaustive selection of salient comments by participants is provided in with the main text to reinforce overall findings of this analysis. Throughout the report we make statements to indicate the extent to which views are commonly held and sustained across the dialogue and use multiple quotes to draw out and differentiate views around salient points. Box 1.3 summarises basic protocols deployed within the text to present participant comments.

Box 1.3 Note on transcript presentation

…	Pause in speaking/comment trailing off
[…]	Truncated participant text/deleted words
[xyz]	Author word insertion/ substitution to clarify meaning
MDR	Moderator
SPEC	Specialist

1.6 Structure of report

This report presents its findings in two major parts. Part B – *Making sense of ecosystems* – considers how participants thought about the natural environment as a context for their well-being and what they thought of the concepts and framework of ecosystem services as a way of describing and thinking about the environment and the dependency of people upon it. Part C – *Making decisions and managing ecosystem services* – explores how participants viewed the concept and framework as a tool for informing decision making. We consider how people characterised good decision making and explored the challenges and opportunities of seeking to use these ideas in the context of the Ecosystem Approach. Consideration of the specific issues of valuing and paying for ecosystem services are presented as discrete chapters. Part D explores how participants rationalised the future specifically with regard to the NEA scenarios. The report concludes with a summary of the narrative emerging from this dialogue and its implications for policy and practice.

Table 1.2 Stage 1. Public Participation – Numbers and Retention

LOC.	EVENT 1			EVENT 2				EVENT 3		
	Att.	No show	Left early	Att.	No show	Retained	New Recruits	Att.	No show	Retained
Ext	36	4	-	36	4	33	3	35	5	34
Bm	40	-	-	40	-	40	-	40	-	40
Gw	36	2	2	39	1	36	3	39	1	39
	112	6	2	**115**	5	109	6	**114**	6	113

Att.= numbers in attendance; no show= invitees who did not show up; retained = participants who re-attended dialogue; new recruits = substitutes for no shows.

Table 1.3 Stage 1 – Specialist Participation

EVENT	CONTRIBUTORS	EXETER		BIRMINGHAM		GLASGOW	
1	NEA Scientists	M. Everard	UWE	M. Everard	UWE	Mark Everard	UWE
		M. Winter	EX	A. Scott	BCU		
	Other Specialists/ Observers	P. Sadler	EA	H. Featherstone	EX	S. Shirley N. Melville	SEPA
				T. Pickering	EA	Fiona Mills	FCF
2	NEA Scientists	M. Everard	UWE	M. Everard	UWE	Mark Everard	UWE
	Specialists/ Observers	P. Cosgrove	MMO	C. Kavanagh	MMO	J. MacPherson S. Shirley	SEPA
		M. Ross	SWW	T. Pickering	EA	F. Mills	FCF
		A. Austen M. Kelly	NDDC	S. Wykes	SCC	S. Fergusson	GCVGN
		L. Schneidau	DWT	N. Grayson	BCC	N. Makan	SNH
		A. Bell	NDB				
3	NEA Scientists	G. Kass	NE	M. Everard	UWE	M. Everard	UWE
		D. Russel	EX	A. Church	UB	J. Kenter	UA
	Other Specialists/ Observers	M. Stithou P. Cosgrove	MMO	A. Lanning	MMO	S. Shirley R. Badger	SEPA
				T. Pickering	EA	I. Glasgow	FCF

Abbreviations. BCC: Birmingham City Council, BCU: Birmingham City University, DWT: Devon Wildlife Trust, EA: Environment Agency, EX: University of Exeter, FCF; Firth of Clyde Forum, MMO: Marine Management Organisation, NDB: North Devon Biosphere, NDDC: North Devon District Council, NE: Natural England, SCC: Stoke City Council, SEPA: Scottish Environment Protection Agency, SWW: South West Water, UB: University of Brighton, SNH: Scottish Natural Heritage, UA: University of Aberdeen. UWE: University of the West of England

Table 1.4 Stage 2 – Specialist Participation

CONTRIBUTORS	DAY 1		DAY 2	
NEA Scientists	Ian Bateman	UEA	Mark Everard	UWE
	Nigel Cooper	ARU		
	Mark Everard	UWE		
Specialists/Observers	Helen Dunn	Defra	Isabel Glasgow	FCF
	Isabel Glasgow	FCF	Tom Hooper	RSPB
	Tom Hooper	RSPB	Ashley Holt	Defra
	Gary Kass	NE	Gary Kass	NE
	Simon Kerley	NERC	Simon Kerley	NERC
	Simon Maxwell	Defra	Simon Maxwell	Defra
	Colin Smith	Defra	Steve Spode	WG
	Marva Stithou	MMO	Marva Stithou	MMO
			Sian Sullivan	BSU
	Ruth Waters	NE	Ruth Waters	NE
			Duncan Williams	Defra

Abbreviations. ARU: Anglia Ruskin University; BSU: Bath Spa University; Defra: Department for Environment, Food and Rural Affairs; FCF: Firth of Clyde Forum; MMO: Marine Management Organisation; NE: Natural England; NERC: Natural Environment Research Council; RSPB: Royal Society for the Protection of Birds; UWE: University of the West of England; WG: Welsh Government.

'Naturally Speaking …'

a public dialogue on

valuing and managing our environment

Dialogue Cartoons by Luke Warm

CHAPTER 2. WHY THE NATURAL ENVIRONMENT MATTERS TO PEOPLE

Summary

- Participants in the dialogue drew an unambiguous and fundamental connection between the natural environment and human well-being. People were considered dependent on the natural environment for a range of physical, mental and economic benefits, specifically:
    - Escape and freedom: places where people can get away from work and feel free from constraint;
    - Valued social interactions: places that enable interactions between friends and family and community;
    - Physical and mental health: places for physical exercise and achieving inner peace and mental calm;
    - Tangible and intangible cultural heritage: places for re-connecting people to their pasts and sustainable models of living.
    - Education and learning: places of instruction and where imagination, wonder and interest in life is triggered;
    - Economic productivity: places that support industries and livelihoods and provide materials that underpin human infrastructures.
- In general, the cultural and health dimensions of human interactions with nature were most prominent in the dialogue. Alongside these benefits participants also understood that the natural environment was an external threat that could threaten and overwhelm human livelihoods.

2.1 Introduction

This chapter examines the general views and values of participants towards the natural environment. We draw specifically on the findings of work undertaken at the very start of the dialogue where the aim was to explore perspectives in an un-primed way; that is, before formally introducing participants to the work of the NEA and related developments in environmental policy, such as the Natural Environment White Paper (2011). This process involved two components.

First, it involved a short electronic polling exercise in which participants were asked to respond to a series of (non-contextualised) statements about the natural environment in terms of their depth of agreement/disagreement. The polling approach was designed to settle the participants in to the process as well as to build an initial profile of their environmental outlook.

Second, it involved a discussion-based exercise in which participants were presented with images of a range of different habitats and asked to comment on these in terms of their potential contribution to human well-being. Here the purpose was to enable dialogue participants to discover the concept of ecosystem services on their own terms, as well as to encourage participants into a group conversation and build confidence.

In this chapter we provide a short overview of the key findings from these two processes, which together laid the ground for discussing specific NEA concepts and findings and applications within policy and practice.

2.2 Initial views on the natural environment

The findings of the electronic process are provided in Table 2.1, broken down by responses to key statements by dialogue location. Overall, this process revealed a very clear initial narrative on the environment among participants. In certain important respects it revealed perceptions about the natural environment consistent with the general thrust of environment policy. For example, in the text of the 2011 White Paper, which draws directly on the NEA to make many of its policy arguments, it is stated that:

- "Nature is sometimes taken for granted and undervalued. But people cannot flourish without the benefits and services of our natural environment.;"
- "A healthy, properly functioning natural environment is the foundation of sustained economic growth" and;
- "Whether we live in the city or the countryside, natural systems support us."

For the polling process we developed statements to capture these basic propositions (Statements 2-5). The findings of this exercise revealed that a strong general association was

Table 2.1 Initial views on the natural environment: Electronic Polling

POLLING STATEMENT		LOCATION	RESPONSE CATEGORY (%)				
			Strongly agree	Tend to agree	Couldn't say	Tend to disagree	Strongly disagree
1	Great progress is being made on the big environmental challenges of our time	Birmingham	3	31	32	31	3
		Exeter	3	31	22	31	13
		Glasgow	12	38	32	12	6
		Mean	*6*	*33*	*29*	*25*	*7*
2	Individuals and communities need a healthy natural environment in order to flourish	Birmingham	50	42	8	0	0
		Exeter	53	34	1	9	3
		Glasgow	62	35	3	0	0
		Mean	*55*	*37*	*4*	*3*	*1*
3	Society tends to take the natural environment for granted	Birmingham	44	42	3	8	3
		Exeter	38	53	3	6	0
		Glasgow	63	37	0	0	0
		Mean	*48*	*44*	*2*	*5*	*1*
4	Wherever we live in the city or the countryside the natural environment supports us	Birmingham	21	24	25	21	9
		Exeter	44	44	3	9	0
		Glasgow	31	31	24	14	0
		Mean	*32*	*33*	*17*	*15*	*3*
5	Economic prosperity relies on a healthy natural environment	Birmingham	23	31	29	17	0
		Exeter	9	30	19	39	3
		Glasgow	26	35	30	3	6
		Mean	*19*	*32*	*26*	*20*	*3*
6	We should maximise the use of our natural environment	Birmingham	53	28	8	8	3
		Exeter	39	24	25	12	0
		Glasgow	75	13	3	6	3
		Mean	*56*	*22*	*12*	*9*	*2*
7	The long term future for my local natural environment is generally positive	Birmingham	3	6	27	39	25
		Exeter	0	25	21	41	13
		Glasgow	0	22	51	19	8
		Mean	*1*	*18*	*33*	*33*	*15*

made between the idea of a 'healthy' natural environment and the capacity of individuals and communities to 'flourish' (92% overall agreement – Statement 2). We also found the natural environment was viewed as being taken for granted by society (92% overall agreement – Statement 3). However, the association between economic prosperity and a healthy natural environment was less strongly drawn (51% overall agreement – Statement 3) as was the idea that people are dependent on the natural environment wherever they live (65% overall agreement – Statement 4).

There were many reasons why people made these different associations and we discuss these below. In general, associations made between the natural environment and economic activity were important but asserted less frequently than non-work benefits to health and well-being, and in some cases the presence of a high quality natural environment was seen as a signal that economic activity had receded. Relatedly it is notable in the dialogue that the statement 'we should maximise the use of our natural environment' drew 78% overall agreement. The idea of maximising use tended to be interpreted as maximising social use, rather that economic use. Equally, dependencies on the natural environment are seen to vary because some viewed non-urban populations as drawing more directly on land and sea resources for their livelihoods.

Finally and importantly, the polling revealed that, overall, participants were uncertain about whether 'progress on the great environmental challenges of our time' was being made, and further, were generally pessimistic about the future outlook for their local natural environment over the long term (see Statements 1 and 7). Running themes underpinning these reactions were the challenges of mitigating flood risks and the negative impacts of development, specifically house building.

2.3 Why is the natural environment important to people?

"All the images have hope"

For the photo elicitation exercise we selected visual images which reflected the NEA's broad habitats. We grouped the eight NEA habitats into four clusters, namely: *upland landscapes* (including moorlands, heaths and semi-natural grasslands); *enclosed farmlands and woodlands; urban and urban fringe* (including fresh water habitats); and *coastal margins and the marine environment*. In each dialogue location participants were divided into four groups and assigned one of these clusters to consider (c. 25-30 people per cluster overall). Each of the groups was asked to consider a set of three images depicting different facets of these habitat groupings (see Figure 2.1 below).

This approach was applied consistently across each of the dialogue locations to allow comparisons to made, but the examples used were regionally specific to Exeter, Birmingham and Glasgow. Methodologically, the choice of images was necessarily selective but overall we judged these choices to be sufficiently illustrative and proportionate to the purpose. Participants were asked to comment on the value these landscapes have, first for them as individuals, and second, for society as a whole.

In the analysis below we provide an overall narrative of participants' responses to the images, drawing out themes that cut across all habitats, but also highlighting points that distinguish these environments. Our approach to analysis here is inductive, in the sense that we grouped responses according to patterns that reflect how people spoke about the natural world, rather that fitting them to *a priori* categories provided by the NEA or wider well-being literatures. Nonetheless, an important aspect of this work is that it reveals interesting parallels with the NEA framework and we comment on this in the conclusion.

Figure 2.1 Habitat visual stimuli*

	UPLAND HEATH/MOORLAND	UPLAND FRESH WATER/LANDMARK	SEMI-NATURAL GRASSLAND
Birmingham			
	Open heathland, Peak District	Dovedale and Thorpe Cloud	Offa's Dyke on Spring Hill
Exeter			
	Open heathland, Dartmoor	Clapper bridge, Dartmoor	Widecombe in the Moor
Glasgow			
	Moorland Trossachs Park	Glengyle House, Loch Katrine	Grassland by Loch Lomond

	INTENSIVE AGRICULTURE	EXTENSIVE MIXED FARMING	WOODLAND
Birmingham			
	Stratford upon Avon	South Shropshire Hills	Cannock Chase Forest
Exeter			
	Devon agriculture	South Molton Farmland	Haldon forest
Glasgow			
	Bridge of Earn near Perth	Clyde Valley near Biggar	Queen Elizabeth Forest Park

Figure 2.1 Habitat visual stimuli* (Cont.)

	PARK/BOTANICAL GARDEN	URBAN WATER/NATURE RESERVE	CITY CENTRE LOCATION
Birmingham	 Birmingham Botanical Gardens	 Edgbaston Reservoir	 The Water's Edge, Birmingham
Exeter	 Belmont Park, Exeter	 River Exe from Cowley Bridge	 Exeter Cathedral square
Glasgow	 Glasgow Botanical gardens	 Hogganfield Park	 St Andrews Suspension Bridge

	OPEN SEA VIEW	BEACH	HARBOUR
Birmingham	 Black Rock Sands Headland	 Skegness beach	 Aberystwyth harbour
Exeter	 Wembury Point	 Exmouth water front	 Brixham port
Glasgow	 Firth of Clyde	 Lunderston Bay	 Greenock waterfront

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2.3.1 Fundamental connections: being part of something larger

Overall, participants in the dialogue drew an unambiguous connection between human well-being and their interactions with nature. Many spoke of humans as being small parts of a much larger natural world and viewed the environment as a life-giving and life-affirming force in their lives; an essential part of what it means to be human. Some spoke of the natural environment as being *'invaluable'* and *'priceless'* to convey this feeling of dependency upon and wonder in the natural world, and of the importance of staying/being 'in tune' with nature in order to feel satisfied and fulfilled as individuals:

> ***'Yes, that we're part of the life cycle and to remind ourselves that we are still subject to the same laws as the natural world and not think ourselves so far above it, so it's healthy, emotionally and mentally, to be reminded of that.'***
>
> Exeter, Event 1

In making these points they expressed a particularly strong association between different ecosystems and the cultural and health dimensions of well-being, but also between habitats and the provision of products of economic value to society. These associations were often set within wider concerns about duties of care and responsibility to the natural world, as well as the sense that people are insignificant in the face of the natural environment's innate power, with one participant urging us not to *'underestimate nature; we are not as powerful'*. The capacity of nature to overwhelm and threaten lives and livelihood, for example floods decimating property and business as well as valued habitats was an important thread of initial discussions: *'You wake up one morning and the coastline's just totally decimated, by nature, isn't it? So you know your place then, don't you?* The occurrence of major flood events at the onset of this dialogue goes some way to explaining this line of reasoning.

2.3.2 Escapism and freedom

A strong escapist framing of the natural environment ran through the initial discussions. Images of the countryside, seaside and urban green space were all described as places where people could *'switch off'* and *'unwind'*. They represented *'getaways'*, and places for *'getting people away from work'*. Non-urban environments were also viewed in terms of offering an *'alternative'* way of life for those living in built-up areas. Being outside and away from the *'hustle and bustle of everyday life'* and where there was a discernible lack of *'buildings and obvious signs of civilisation'* provided *'a break and an escape from the norm'*:

> ***'I think [the images] are important in that they represent an alternative to an urban lifestyle; they provide people with a choice, which I think is important. Potentially if it's not an alternative lifestyle it can provide, you know an escape from the urban lifestyle in which a lot of us live and I think that's important too.'***
>
> Exeter, Event 1

Participants also quite often brought up the idea that being outside and surrounded by nature and away from signs of civilisation gives people a *'sense of freedom'*. They commented on the non-urban natural environment as a place that was spacious and *'free of restrictions'*. In urban areas people lived so close to each other and are *'restricted'* and *'like sardines in a tin'*. This impression of freedom was particularly associated with upland landscapes (*'you're free to roam, there are no restrictions at all once you get up on Dartmoor'*). Participants emphasised the openness, vastness and ephemerality of these environments, and the possibilities they encouraged in people to be active without the need for material objects and overt consumption, even the sense that social differences between people were less apparent in face of a remote and challenging environment: *'we are all equal up there'* one said.

In all of this it is important to note that participants from Birmingham and Glasgow also argued that it is difficult for many people living in central city locations to *'escape'* to the open countryside. They pointed out that a significant part of the urban population cannot afford to travel far from their homes to *'change scenery'* and enjoy the benefits of nature. However, some participants also suggested that a large majority may not fully appreciate what they have available to them within relatively short reach:

> ***'I was surprised at how beautiful it could be, and that that exists within an hour's drive.'***
>
> ***'I can't believe that's an hour away.'***
>
> ***'Yes, I was just about to say, I can't believe that's an hour away.'***
>
> ***'It's right on your doorstep. That's quite shocking.'***
>
> Birmingham, Event 1

2.3.3 Social interactions

It was very common for participants to suggest that natural environments were spaces of valued social interactions. For example, open countryside, seaside and parks can offer recreational opportunities where relationships can develop in the context of family social relations, such as providing space for people to talk, and in particular enabling interactions and communications across generations (*'the only time that some families get time together'*).

Within these reactions, opportunities for recreational social interactions within the natural environment were important because they were *'a free resource'* for families and friendship groups: *'it doesn't cost anything'* as one put it in relation to the beach: *'It's relative-, apart from the travel to get there, it's a free resource, I mean a lot of days out, nowadays it's so expensive for young families, and you can go to the beach for nothing.'* Some participants again equate access to a free resource with the feeling that they are unrestricted in their experience and enjoyment of time spent in the natural environment.

Urban green spaces were considered particularly important environments in which communities can visibly come together and interact, from couples and families to social groups and organisations. Participants described parks and greenspaces in the city variously as *'good meeting places'*, *'places for communities to meet in the city'*, places that *'link communities with the natural world'* and places which *'pay [back] for community'*. They equated the provision of infrastructure within these places as essential to attract community activities, for example provision of children's play areas or picnic facilities around a park can attract people to meet and interact. Such activities were not only thought to promote affiliations with place but to foster duties of care and respect to the natural environment within an urban context (*'I also think, as well, if you're taking children to places like this, they then tend to respect it, so it becomes part of your society, and they would take their children there as well, I would think'*). More generally some suggested that in the context of these places, the outlook of people is shaped in positive ways. Human behaviour changes through interaction with the natural world, they suggested. People become more open and willing to communicate and this is felt to instigate respect between people (*'I kind of want to say that to the value of society, it creates more well-rounded people, if you kind of chilled out in the environment all the time'*).

2.3.4 Physical and mental health

The health benefits of individual interactions with the natural environment were asserted in a number of ways. Being outdoors provides *'massive health benefits for all'* one suggested, while participants discussing rural settings often referred to these environments in terms of offering models of healthier living (*'healthier, more organic lifestyles'*). Participants very often spoke of the general *'cleanness of the natural environment'* and referred frequently to air quality to define experiences of the environment (*'fresh clean air that is really natural!'*). In general, the health benefits of living in less polluted places, with fewer roads or less industrial activity around, were commonly asserted:

> ***'Very healthy, you haven't got a big nasty chimneys belching out lots of carbon monoxide and all the rest of it, that's one issue'***
>
> ***'The thing that came to my mind […] is about this picture being 'the lungs of the city'. You know, the areas that one has got around cities that, you know, sort of pressing the need for that'***
>
> Exeter, Event 1
>
> ***'I think when people go to these places, they appreciate the fresh air that they get, that you don't get in cities. Or even at the seaside, you feel as if you're breathing fresh air that you don't get every day, staying in this environment'***
>
> ***'I think when people go to these places, they appreciate the fresh air that they get, that you don't get in cities'***
>
> Glasgow, Event 1

The provision of open/green spaces within the city was thought to contribute significantly to the health of urban citizens. Participants described urban green space as the *'lungs'* of the city and placed great importance on personal health and well-being benefits arising from contact with nature in urban areas. They expressed this relationship in a variety of ways: physiological, emotional and spiritual. For example open spaces were said to offer the opportunity for physical activity through leisure, sports and outdoor park activities: going outside *'just to get some fresh air'*; having a *'nice walk'*. All of these activities *'make you feel better'*. They emphasised the restorative qualities of urban green space, the emotional and health benefits of nurturing living things in cities (such as birds), and that opportunities for direct contact with urban wildlife should be encouraged.

> ***'I think Hogganfield is a bit therapeutic, because when you're in nature and you're feeding the animals, as you were saying, with your wee boy, it is peaceful, and it's family time, sort of allows the things that people live for'***
>
> Glasgow, Event 1

Such interactions served to relax and relieve the tensions created by the *'artificial'* surroundings of the built environment and tempered the effects of busy working lifestyles; *'it makes you feel relaxed if you've got nice scenery'*. Exposure to nature was thought to reduce the stress associated with urban living and therefore help foster better social and working relationships. Participants generally made reference to nature's positive effects on productivity at work and wider economic prosperity (*'a relaxed person is better in the workplace'* one argued), although they do not see urban nature as a panacea (*'You might be in millions of pounds of debt, you might be seriously depressed but you're not going to go for a walk in the [Edgbaston] reservoir and feel better'*). Some participants also cautioned that the challenge for green spaces within cities was to make them inclusive spaces. They needed to meet the *'expectations'* of urban citizens with generally varied cultural, ethnic and socioeconomic backgrounds. Urban natural spaces should come in a variety of shapes and sizes and styles to enable a diverse spectrum of opportunities for contact with nature. In general, providing access to nature in cities should not be seen as an optional amenity, but rather an essential component of urban infrastructure.

Participants also sometimes drew historical parallels to convey that the health and well-being of interactions with nature have been long understood. For instance, at different dialogue events a number of participants suggested that the health advantages of nature within the cities were recognised in the 19th century when Victorian industrialists and city officials designed urban parks in the hope that parks would reduce the adverse consequences of industrialisation.

> ***'As you're saying, these parks are all made in the past. That's a Victorian park, and it was the Victorians that made the industry, because they knew you needed the green places as well as that. That's why a couple of miles through there, you've got it greener for the public'***
>
> Glasgow, Event 1

The natural environment was considered a place of physical exercise and challenge. Being outdoors in the fresh air or having physical exercise and activities, whether hiking,

canoeing, sea sports, or playing at the park or on the beach, was often emphasised by participants. The word *'fun'* came up very often in the context of recreation and exercise. Participants saw the natural environment as offering the potential for deriving pleasure and enjoying life. These areas are *'great natural playgrounds'* as well as places of physical activity per se.

However, the most important benefit appeared to be the perceived effect of nature on inner health and peace. This may be procured from direct physical interactions with the environment, including the feeling of being free to roam, or at a distance, such contemplating a view from the window (*'prosperous nature views'*). The environment as a *'stress reliever'* and a place where sanity is maintained was also common asserted. One participant discussing urban environments commented that without green areas within urban areas residents would be *'at the asylum'*. More generally: *'I was just thinking, when you say "value", it's invaluable for us, in what everyone has said, really. It can help you keep sane, mental health, self-esteem, confidence'*. Or again: *'I think it's healthy for your soul and for your spirit as a person to be surrounded by nature to some extent and to see animals and everything'*.

2.3.5 Culture, heritage and identity

There were many references made to the cultural significance of open green spaces. For example, participants remarked on the cultural significance of upland landscapes arguing these landscapes should be particularly appreciated for their culture and heritage by people across the country. No matter how remote and unspoilt these settings are perceived they sustain historical features, marks of the enduring continuity of human presence on them, and support remnants of rural communities and traditional ways life that would otherwise be lost. They are cultural landscapes and therefore sustain social/collective memories about place. An indicative comment was one participant describing images of rolling countryside, with small fields surrounded by hedges and sparse treelines, as *'precious'* heritage which should be maintained for future generations and urging caution about overexploiting the countryside:

> ***'I suppose you feel it's precious in some way. It's almost like we sense it's lost and that you want to hold onto it. It's almost like there's a creeping industrialisation taking over that it becomes quite important to try and hang onto the values and what is there.'***
>
> Glasgow, Event 1

For some participants the beauty of nature also evoked feelings of belonging, sometimes in terms of national self-identification. *'It makes you stay in the UK'* said one participant speaking about Dartmoor. The idea that the natural environment is a space where family stories accumulated was also asserted:

> ***'My children […] they loved Dartmoor. They talk about it now, and it's a great part of their childhood. [It is] everything about Dartmoor … when they tell stories about their summer holidays'***
>
> Exeter, Event 1

Furthermore participants expressed strong cultural associations with city parklands, especially designed parks and botanical gardens. They described botanical gardens as *'landmarks of the city'* and agreed *'it's good to have something like that available'* because, as one put it, *'there's a lot of history there'* and these places offer opportunities for cultural interactions and promoting heritage.

2.3.6 Education and learning

There was a strong sense that natural environments offered people learning opportunities either in organised or informal contexts. The histories and cultures embedded in the non- urban environment provided valuable knowledge that could teach people about living in harmony with nature. For some they represented traditional ways of life and were sometimes used to evoke *'back to nature'* attitudes and re-connecting the population back to basics:

> ***'When you look at Widecombe you see that it is that natural, old-fashioned way and they are like jam making and using up every resource from what they've got there with them. That mustn't be lost, you know, learning what your gran did with something years ago; it should all be brought back so we're not such a wasteful society.'***
>
> Exeter, Event 1

More generally aspects of the natural world – animals, plants, the rocks, the sea, the beach, and the fresh air – were often discussed by participants as triggers for the imagination. They helped people learn about their relationship to their world, take wonder in, and value, the natural environment. Experiencing nature directly rather than as mediated through texts, such as reading books, or watching TV programmes, was an important dimension of these discussions. Direct interaction with the natural environment was thought to enable understanding of ecosystems, since processes are less abstract and more felt.

This helps people become more interested in respecting and protecting the environment.

> ***'[In terms of] the value of society [the] kind of big one for me was learning, because I grew up in a primary school and there was a forest opposite the primary school and we used to go out there all the time and play and it's one thing learning from text books and the other thing, then sort of getting twigs and having a sword fight with twigs'***

> ***'like you said earlier on, you can sit in the classroom and talk about Mother Nature and reproduction and all that sort of thing, but it's lovely to see it actually working and taking place in the countryside. Seeing it rather than reading about it in a book or on telly'***

Exeter, Event 1

Alongside the non-urban environment the educational potential of botanical gardens and urban designed parks was also considered important. Participants viewed them as places of scientific experimentation but also as open *'galleries'* that host natural artefacts of plants and landscape design patterns, as well as art objects and educational gatherings and events. Designed parks were for some models of human creativity and innovation that inspired people. They offered *'great ideas of planting and design'* as well as outlooks on human relationships with nature.

2.3.7 Provision of products and livelihoods

Participants made associations between habitats and the provision of products of value to people. They offered a range of examples, from the idiosyncratic (such as *'telegraph poles'* coming from trees and underpinning human infrastructures) to the more conventional, such as food and farming commodities that have economic value. Enclosed farmlands and woodlands were perceived by participants as places that produce livelihoods and contribute to the economy. They also commented on these landscapes as places that provide jobs and made reference to labour, describing them as *'hard working'* spaces that ensure the *'future of society'*. Some participants also pointed out that woodlands and agricultural landscapes not only offer products such as food, timber and fuel but are also very important for natural processes like photosynthesis and the production of oxygen and clean air.

> ***'It sustains because it gives us fresh air, oxygen, but at the same time it produces things for us, so it's sustaining us in different ways. Also the leisure thing, the work, it's almost like an umbrella for everything in some way'***
>
> Glasgow, Event 1

Semi-natural grasslands were also *'natural providers'* that *'please the eye but helps you produce natural food'*. Some participants made the association between habitats looking clean and tidy and food quality; the impression that there is *'nothing very toxic'* in the food they eat and this *'basically makes it priceless, because we've got a natural environment to feed us.'*

They also emphasised the role of natural areas for tourism and recreation: *'without the natural environment we wouldn't have the tourism and therefore the economy would be, well, dead'*. These areas generate revenue for regions and localities and this is fundamental to their economic prosperity. Participants pointed out the significance of looking after the natural environment because economic activities like tourism are dependent upon a healthy environment: *'It's massive, isn't it? What are they talking about now, so many billion it's worth to the South-West? Economy, tourism … and they only come because of the coast, the moors and stuff.'*

Seascapes evoked strong associations with the provision of food, income for local populations and economic benefits for society in general. Images of busy beaches were also associated with economic rewards, mainly from tourism. Connections between recreational and cultural services from seaside resorts and economic development and the labour opportunities they offer were made particularly in reference to images of Skegness and Exmouth beaches. Participants often urged the need for balanced development to ensure enjoyment and environmental protection in these areas. To a lesser extent participants spoke of open sea views in terms of economic activity, often by tying them to technological innovations around wave and wind power generation, as well as the extraction of oil and other medicinal products from the sea. Images of harbours were closely associated with the provision of food, community prosperity, and local employment. They were places of activity that *'brings in money to the place'*.

Participants appreciated the contribution the fishing industry made in providing an important source of food, but also in providing employment for locals. They also expressed some concerns for the future of fishing industries and the livelihoods of local communities. (*'For me, as soon as I saw the harbour, the dying industry was the first thing that came to my mind.'*) The appearance of boats on the images also provoked associations with potential recreational activities and professional skills around fishing (*'The boats, I've put pursuing a hobby or training in fishing, you know.'*) In Glasgow participants associated the image of Greenock waterfront with economic activity from shipbuilding and cruise ship tourism. It was described as a *'depressing'* and *'dull'* environment, but nevertheless very important for the Scottish economy. The image of fishing boats on the open sea was described as a *'peaceful working environment'* reflecting participants' generally positive cultural associations with the practice of fishing.

Some participants, specifically in Glasgow, argued that provision of more green spaces in cities signalled a lack/decline of economic activity. They pointed out that it is difficult but vital to find a balance: *'you can't have a healthy environment with green space and also have an industry which the community values'*, and further, *''the Clyde has been cleaned up, we've got salmon in the Clyde now, there's no pollution from the shipyards. I'm not saying one's right and one's wrong'*.

2.4 Conclusion

Participants in the dialogue were very alert to the importance of the natural environment in their lives. Importantly in the context of the NEA they assign it significance in ways that map directly on to many of the major classes of ecosystem services. In general, the cultural and health dimensions of human-nature relationships loomed large in the discussions but were set within a recognition that the environment is something of which we are ultimately a part, and on which we are fundamentally dependent: nature as a supporter and provider of life. These life-giving and life-affirming functions were given many instrumental expressions, such as providing products and commodities around which economically prosperous communities emerge, but there was also a much broader social dimension to participant discussions: the environment as places to play, build relationships and help communities function. If there is an absence, we might note here that discussions did not strongly articulate processes that relate to the regulating aspects of ecosystems, although there were many instances where this logic was at least implied. Keeping these reactions in mind we now explore how participants responded to the NEA's characterisation of these concerns.

CHAPTER 3. REACTIONS TO THE NEA AND 'ECOSYSTEM SERVICES'

Summary

- Participants were generally encouraged to learn that an environmental study of the scope and ambition of the NEA had been commissioned by government. They appreciated it as a valuable study that documented our changing ecosystems and they felt its recommendations should be considered in decision making.
- The NEA was generally viewed as a resource for learning and thinking about the natural environment in new ways. Overall, participants reacted positively but cautiously to the NEA philosophy and the 'ecosystem services' framework and concept.
- The conceptual framework of ecosystem services was valued by participants because it provided a holistic and systematic overview of the natural environment. They especially appreciated its broad aspirations and its interconnected view of the world.
- Some participants were sceptical about the use of the term 'services' to describe human relationships with nature. They associated services with a consumerist view of nature and worried about the long term implications of this way of thinking, particularly paying for things they currently have right to access freely. They also felt that the framework needed to further encourage the idea of human responsibilities and duties of care towards nature.
- In general, the categories of ecosystem service that resonated most strongly with participants were cultural and provisioning services. Cultural services were frequently singled out by participants as an indication of the framework's holistic outlook, while the logic of provisioning services was well understood and articulated by participants who saw the strong connection between environmental processes and economic prosperity.
- Participants found the categories of regulating and supporting services less self-explanatory. Participants understood supporting services as embracing all background processes of nature and were perplexed why specific examples of regulating services belonged in a separate category. The regulating services category tended also to be equated with the practice of regulation. The language of ecosystem services is generally perceived as technical and specialist. Participants cautioned against using these and related terms if the intention is promote broad societal engagement in natural environment decision making. However, many participants demonstrated mastery of key concepts over the course of the dialogue and actively used NEA terminologies.

3.1 Introduction

In this chapter we explore how participants reacted to the philosophy, framework and concept of 'ecosystem services' developed under the NEA. Before doing so, it is worth underlining that participants were generally heartened to learn that an environmental study of the scope and ambition of the NEA had been commissioned by government. Although it was common for participants to question whether and how NEA findings were being taken forward, the Assessment signified that the natural environment was being taken seriously as an issue ('*somebody is doing something*'). It conveyed to many that scientists and relevant environmental organisations were working to provide *'solutions'* on issues of a long term, cross-generational, nature. Importantly too, the NEA implied that policy and decision making was taking into account research-based evidence:

'It's very good that they have to actually go in and make assessments and monitor the land, isn't it? They could just decide, don't bother with that, we'll cut costs, just don't research that, but the fact that they still do it is really good, they have to monitor the land'

Exeter, Event 1

'It's been encouraging for me, that behind the scenes, people are actually [working for the environment]. It's something that you don't think about, from day to day, and people are actually working on stuff to save the planet. I've had a good innings, but I worry about my grandkids. I've taken everything out of the land, and I'm wondering what's going to be left for them, and I'm understanding that there are people who are trying to solve it for my grandkids. Well it encourages me. It gives me a good feeling'

Glasgow, Event 1

In this chapter we begin by exploring how participants spoke positively of the NEA's framework of ecosystem services because of its holistic and systematic interpretation of the natural environment. Participants valued and endorsed this broad 'systems' picture of human dependencies on nature. We go on to consider more specific interpretations of key concepts, first by drawing out some issues and concerns participants had with viewing nature in terms of 'services', and then by considering the different ways participants made sense of key classes of ecosystem services as they used and applied them. Notwithstanding that some participants made these concepts their own over the course of the dialogue, It is important to note an underlying concern with terminology if the intention of government is to use the framework to promote broader societal engagement with natural environment-based decision making.

3.2 A resource for thinking and learning about the environment

Among the positive initial reactions, participants quickly spoke about the extent to which the work of the NEA confirmed or extended their thinking about the natural environment. One strand of reasoning was that the NEA primarily *'reinforced'* what they had already thought about the environment and although this was a new language there were *'no particular surprises'*. The NEA was described by some as mainly a *'prompt'* and *'reminder'* that issues, such as energy and food production or climate and soil fertility, were affecting people's lives. It was *'good for brainstorming'* as one put it, since it reminded people that the natural world is the source of everything they have and enjoy in life, and further, that society needs to stop taking everything for granted and treating the environment as an expendable, unlimited resource. Significantly though, it was also very common for participants to view the NEA as a resource for learning and thinking about the natural environment in new ways. One described a *'waking up'* feeling that occurred when presented with the framework. Others talked of the NEA in terms of changing *'mind-sets'* and offering *'a new way of thinking'*. The NEA provided *'an alternative', 'it's opened my eyes', 'it made you think.'* It was *'quite brilliant', 'inspirational'* and *'enlightened'*:

> ***'I think it's a helpful framework, because it makes you think about things that you wouldn't necessarily think of immediately'***
>
> Birmingham, Event 1

> ***'It's thought-provoking, but you've got to start somewhere. So, you're giving us headings, really, to start thinking'***
>
> Exeter, Event 1

> ***'I had never thought of things. […] I just feel, oh gosh, we do get our water supply […] we do get pleasure. Well, that's a known fact. We get pleasure from looking at nice things I suppose, but mushrooms, medicinal … You don't think of these things'***
>
> ***'It's not the first thing you think of.'***
>
> ***'It's the obvious you think of … food and fuel and fish.'***
>
> ***'It honestly made me realise that I really take everything for granted, until I've done this. I would never have considered, like, the farms around, like the traffic around …'***
>
> ***'Realised how much work goes into it, before the bricks are laid, basically'***
>
> ***'I think having heard about all the services, that it helps to look at the map and say, "we'll take care of that". It means you consider what's on the map, and how important the impact is. If you didn't know that you would ignore [it]'***
>
> ***'I wouldn't have known anything about it, so therefore I'd just have plodded on. It's education for me, to be here today'***
>
> All Glasgow, Event 1

In making these points it is important to recognise that participants responded very positively to a committed scientific specialist presenting the NEA. Some participants indicated in their responses that they were enthralled by what they considered a charismatic scientist explaining the NEA's work to a small public audience. This is an interesting message in its own right for dialogue, and more generally the communication of scientific information.

Nonetheless, the overall argument we wish to make is that, with certain important caveats, participants were generally well disposed to the work of the NEA. In general, the NEA was considered a new and challenging, if not *'vital'*, way of thinking about the natural environment, and for some, one that served to challenge preconceived wisdom about what was considered the remit of the environmental agenda (*'astonished to realise the vast array of issues involved'*) .

3.3 A holistic view of the natural environment

One of the central reasons the ecosystem services framework was appreciated by participants was for its holistic ambitions. Participants took from the framework that the NEA was encouraging a more in-depth and systematic view of the importance of the natural world (*'big picture', 'makes me see the complete picture', 'move beyond the scenery', 'just hadn't thought of plants, chairs, and metals'* all being connected). This type of reasoning emerged as a persistent thread of the dialogue, and one that grew in sophistication as participants became more familiar with underlying intentions, and as they discussed the framework with reference to specific examples.

> ***'[it's] think[ing] about the system as a whole...[ ] I mean when we first started doing it, it was about recycling and bits and bobs like that … and we all started up from … very, very small. And the more information it was like 'oh my god and it just doesn't come down to that'***

> ***'I quite like the fact that everything seems to be thought of as a whole. It's really opened my eyes to that fact that everything you do is potentially a trade-off for something else or could lead to other problems and that sort of thing. And I think it's very, very acceptable, in fact it's essential that you think along those lines. Because it stops you or at least it minimises the chances that in trying to do good you create more problems. It allows you to think of all the possibilities. And I am frankly surprised this wasn't what was happening before because it's possible then that in the past we've been creating loads more problems by trying to solve them [in a piecemeal way], if that makes sense. So I think that is very acceptable and that is the way that it should go […] And it just allows you to look at every angle which is what you want to do in any situation, to look at what benefits you're getting, at what cost and to see whether that cost is worth it or if there's any other options. It makes you look at alternatives, even just in this example that we're looking at here. It's allowing us to think of things as a whole'***

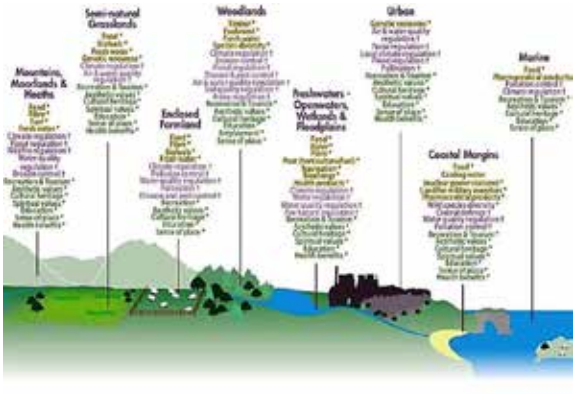
London, Day 2

The framework signified for participants that managing the natural environment is complex and multifaceted, with multiple effects and interactions. From a very early point in discussion many participants became animated by systems-type thinking. Some pointed generally to the idea that interconnectedness implies interdependency, and thus the framework may helpfully recognise that the system

Figure 3.1 Experimenting with classes and types of ecosystem services

Example annotated landscapes by dialogue participants

Stimulus: annotated Landscape (NEWP, 2011)



Stimulus: landscape cross section (NEA, 2011)

has to be managed as a whole: '*The thing that stuck in my head the most, I guess, is the cycle; the fact that everything is connected, and if you take one piece away, the cycle is broken*'. Others interpreted the framework positively in terms of linking up personal action with higher scales and impacts such as understanding how local and global issues are intertwined:

> ***'It provides the link in the chain from where you are, us, right at the bottom of it, recycling your stuff, up to the tsunami […] you sort of start the link and with this you can see where your action links into the bigger one, and the bigger one, and the bigger one, and the bigger one. I think that's probably it if you wanted it in a sentence'***
>
> Birmingham, Event 1

In sum, participants valued the way the framework encouraged expansive thinking about human dependencies on the environment, although some were quick to contrast its ambitions with a more prosaic and everyday reality (*'Interconnectedness is a grand sort of philosophy, isn't it? Whereas in our day to day life we're interested in our family and our people'*). They suggest that people do not automatically associate the natural environment with their everyday lives, or the impacts of everyday actions with knock-on effects. It was asserted that people do not think in a systematic way about what they get from the environment and what they give back in terms of positive and negative impacts. Purely at a personal level the framework was encouraging because it enabled this realisation, particularly at a local level. From very early on participants often re-described the framework in terms of issues salient to their own lives, for instance, for thinking about the knock-on impacts of development, such as housing and wind farms.

At the same time, the summative approach of the overall framework was also considered helpful: '*[i]t is clearer and easier to understand*' issues this way as one put it. They liked the idea that a seemingly complicated set of issues were encapsulated by a handful of categories and motifs that could then be looked into further:

> ***'Because when it's broken up into little sections you can think of each section more, and then you can figure out that more'***
>
> ***'Once you understand what cultural services are it's just saved a lot of thought processes, straight away I have a general image, a general picture, of what they mean. So, I know they're talking about***

quality of life, and well-being and so on, because they've used this technical term which I wasn't aware of before, but now it's come into use, I think it's useful as a policy maker. It's a great benefit. It's just so much easier. Instead of having 20 sentences describing something, you have a couple of words'

Exeter, Event 1

'Just that it's compartmentalised in a way, that it's in layman's terms, you know, you saw that book and you think, "Oh God", but you know the fact that it was broken down into those different key areas and you saw what was involved in those areas you think "Okay I can relate to that, I can understand what that bit does, what that bit does," so it was understandable'

'It's broken up into little sections you can think of each section more, and then you can figure out that more'

'It does make much more sense breaking it down as much as possible into bite-size bits of information and making people realise there's so much more going on than just what they're looking at, what's staring them right in the face'

Glasgow, Event 1

However, some participants gestured at that framework's rather *'bureaucratic'*, *'inflexible'* and *'tick boxy'* feel, while a constituency of participants were also daunted. One used the word *'scary'* to describe the immensity of issues considered by the framework. Another referred to the NEA as a *'vast subject'* that made them *'feel quite powerless'*. Others suggested that the Assessment's breadth may obscure a sense of focus and wondered how decision makers could be expected to deal with the complexity the framework was recognising:

'I found it very helpful for making me think, but I'm in a bigger dilemma than I ever was before, because I really don't know that there's an answer'

Exeter, Event 1

'Just one reservation […] about how we could be so careful, obsessed with the system that if we focus so much on it, we're liable to forget something and it might be something which is really key and important. And so it's really good to also understand the issues. If you miss out something as part of the equation then it's going to be a really loss. You won't be focusing on it at all'

'I found that it was informative in, like, a piece of research, but I wasn't quite sure what… do you know what I mean? What, will it be used for?'

Birmingham, Event 1

'It's so like, vast, it's like space';

'I like a start, a middle, and an end. I think we started…'

'You can't see the end.'

'No'

London, Day 2

3.4 Ecosystems as providers of 'services'

Despite identifying strongly with the NEA's holistic outlook, the concept of ecosystem services proved controversial for some participants. From early on in the dialogue a persistent critical strand, coming from a significant minority of participants, was that the term might be taken to signify a *'consumerist'* view of nature and might wrongly encourage the idea that the natural environment was a limitless and unconstrained resource that people could abuse. They were worried that this type of language signalled that nature was being gradually commodified (*'they're selling fresh air now'*) and would encourage the view over time that people would have to starting pay for things they had currently had the right to enjoy freely. Consider some of the following comments from the Glasgow dialogue, where these points were made in a particularly forthright way:

'Services are generally something you pay for, whether it's directly or indirectly, and something like nature is supposed to be something that's available for everybody free of charge. So why classify them all like that? Is it giving them a, sort of, long-term loophole into start charging for these things?'

'[The natural environment] is just coping at the moment, so does that mean it's going to be abused more, if it's getting to be used as a service?'

'That's not necessarily the best thing'

'Now it makes sense, but just looking at the way society has gone; it's always looking for a way to get more revenue from things. Now by actually classifying, 'This is a service,' and getting people to understand that it's a service, you could see in 20 years or 50 years or 100 years that you start paying for things that you take for granted, whether it's just an increase in tax or new taxes or something like

that. It comes up in the future. Not the immediate future, but I can just see things going [that way] '

'Everyone [in our group] was concerned if you use the word services then at some point down the line things like water and air and natural resources will be commodified which is obviously not a very good thing'

'[The speaker] talked a lot about how, like, in terms it's all about what it could bring to us as a service. To me, it's driven by money, in a way. Then you think, like, when I was younger, the environment was a place to run and play, and have fun and whatever'

'We've heard all these things before, but now actually defining them and breaking them into categories and listing them, you, sort of, see which ones are more relevant and which ones could be charged for'

All Glasgow , Event 1

In sum, as one reflected, participants *'struggle with the word services'* and worried that the term may turn people off:

'Don't like the word'

'I just don't relate to it, I didn't think many people would'

'It means that you're getting something from it, whereas it's actually a privilege'

'Just how my interpretation is, that these are all the privileges; all of the great things, not just as a provider. I don't know'

'Yes, I'd agree with that. Mother Nature, is that what you mean? It's a reward? I know what you mean; it's just like…'

'Looking after it and managing it, it's not just a provider.'

'Not abusing it'

Glasgow , Event 1

As an alternative this group suggested that services procured from nature might be better described as *'privileges'*, while another suggested *'gifts'*. As they reflected on this point a common argument was to urge relationships with nature that are about people *'putting back in'* as much as *'taking out'* (*'don't grab more out of the pot that is in the pot or put more in the pot'*). Participants sometimes wondered how ideas of human harmony and reciprocation with nature might be better reflected in a framework governed by the concept of services. This point arose occasionally throughout the dialogue. At the London event, one group reflected for example:

'Well if we are thinking of it as a service, it is like any other service that we can get, you know, you don't take advantage of it, it has to be respected as anything else. As I say we don't bite the hand that feeds us …you don't damage it and there needs to be a sort of harmony with it. [The framework] needs that sort of harmony within it'

'I think thinking about [nature] in that way [ecosystem services] could damage it but at the same time, you know, we do need to say it is part of the way it helps us function but we just need to not think of it as our…'

'Bottomless pit'

'As a gift; as a gift it is something we get, not something we have earned, to be cherished, looked after…'

London, Day 2

3.5 Understanding and working with ecosystem services

From early on in the dialogue we presented and discussed ecosystem services in terms of their key categories, (i.e. 'provisioning', 'regulating',' supporting' and 'cultural') and used related 'doing' words (e.g. 'provides', 'regulates', 'supports' and 'enriches') to emphasise the framework's philosophy of nature making active contributions to human welfare. A number of remarks can be made with respect to these categories.

First, the NEA's idea of nature playing a provisioning/ providing role was generally well understood and articulated by participants. Provisioning services were generally described by participants in terms of the natural environment providing things that have economic value, be that the provision of industrial sectors and associated jobs (e.g. agriculture) or the supply of marketed goods (such as food commodities). An interesting further dimension was the way participants occasionally linked the idea of provisioning services to that of nature as a 'provider' *per se*, leading some to emphasise 'supporting' services as a key focus for policy and decision makers.

Second, and relatedly, many participants were intrigued by the idea of supporting services. In the dialogue the analogy used for supporting services was that of nature as an

Table 3.1 Participant Classification of Ecosystem Services

	PROVISIONING	REGULATING	SUPPORTING	CULTURAL
TERMS THAT ARE APPLIED WITHIN ONE SERVICE CATEGORY	Clean air	Carbon storage	Breathing spaces	Community spirit
	Farms	Clean water	Cycles	Cultural linkages
	Forests	Diseases	Ecosystem	Ethnic make-up of people
	Paper	Flood control	Field	Fishing
	Quarry/rocks	Healthy Glasgow	Fresh air	Football
	River systems/access	Improve social quality	Habitats	Health
	Sand	Layers of earth slowing water down	Iceberg	Heritage
	Stone- building materials	Noise reduction	Livestock waste	Leisure
	Stuff	Pest control	Milk	Religion – spiritual
	Timber	Pollution removal	Photosynthesis	Sea views
	Trees	Sources	Plants	Society
	Wood fuel	Water retention	Soil	Space
		Precipitation	Wild animals	Sports
			Wildlife	Tourism
TERMS THAT WERE APPLIED ACROSS DIFFERENT SERVICE CATEGORIES	Agriculture		Agriculture	
		Air quality	Air quality	
			Biodiversity	Biodiversity
		Carbon dioxide	CO2 emissions	
			Education	Education
	Energy: wind, water		Energy/Wind	
	Fish for food			
	Food		Food Allotments -	
	Jobs/employment		Jobs	
	Landscape			Landscape
	Livestock grazing		Livestock	
		Nutrients	Nutrient cycles	
		Pollination	Pollination	
	Recreation			Recreation
	Water	Water for the town	Water	

iceberg with lots of functions lying beneath the surface, and existing beyond immediate use values. This idea left a strong impression on people and was seen a key learning point of many initial discussions. It is of note, however, that some participants began wondering how decision makers can make sure the needs of 'supporting' nature are addressed: *'If the important is what we cannot see, how do we know what's happening under the surface?'*

Third, the category of cultural ecosystem services was frequently singled out by participants as an example of the framework's holistic outlook. Participants appreciated the inclusion of a cultural dimension because this seemed directly related and meaningful in people's lives:

> ***'The good thing about the ecosystem services [framework] […] is that it doesn't neglect or it hopefully won't neglect an area like cultural services because you think of it in a framework with all of those four [classes], so you are not just looking at the nature of the habitat of the wildlife, you are thinking about the effects on a bigger picture, the***

supporting angle, recreational, everything and that has got to be good. Its breath … it's a good thing…'

London, Day 2

Interestingly, participants occasionally spoke of the cultural elements of the framework as if these were an element separate, somewhat counterpointed to, ecosystem services per se. Thus for some, there were ecosystem services, and then there were the cultural dimensions of ecosystem management.

Fourth, the category of regulating services was a notable and persistent area of confusion, and one that continued over the course of the dialogue, since the term 'regulating' tends to be associated with the practice of regulation, as in governance and law making, but also practical management.

'I think there's an issue this side of…, potential confusion for services and regulations. That's not a criticism, because that's the terminology that you're using. We know regulations where, yes, in terms of regulating so many things like farms and houses… like that. Just see what they could do to avoid the potential confusion when you talk about regulatory services'

Birmingham, Event 1

'Regulation, everyone knows what it means, but it's kind of, you have to think for two seconds or even one second, "Regulation, what is that?" It's hard to get it in a few words any other way. I think it would be quite interesting to see this flipped on its head'

'Some of it, I sometimes think that it's easier to come up with the, kind of, provisioning services, things that you get from it and, maybe, it's harder to get your head round than regulating service… [ ]…Supporting services I think they, sort of, underlie everything'

Glasgow, Event 1

It is of note that in the dialogue we experimented with use of the term 'maintaining' as a potential substitute for regulating services but this only served to confuse participants further about the distinction between these kinds of services and others, particularly supporting services. The suggestion by participants was that supporting and regulating services seemed to be about background/underlying ecosystem processes and that the distinction would be lost on a non-scientist.

Early on in the dialogue we encouraged participants to familiarise themselves further with the ecosystem services logic by asking them to examine an unannotated local landscape (adapted from the Defra, 2011) and to reflect upon the types of ecosystem services that might be associated with it. This landscape was then marked with corresponding services using 'post-it' notes. A discussion on the ecosystem services framework ensued where participants were given access to a modified annotated version of this landscape depicting the different ecosystem services as well as a landscape cross-section depicting the eight Broad Habitats assessed in the UK NEA and the associated ecosystem services (Figure 3.1)

Some indicative results of the words participants used and associated with particular service categories are given in Table 3.1 It contains all the different words/services as these were identified and classified by participants in the three dialogue locations. The results of the exercise and the subsequent discussion are an interesting further statement on the intuitiveness of the framework. Two points should be highlighted.

First, in terms of describing the landscape according to the four general categories of ecosystem service, it was notable that participants' understanding of provisioning and cultural services most closely approximated the logic of the NEA framework. However, from the perspective of the established framework it is also notable that some provisioning services were confused with supporting services, while some supporting services were confused with regulating services. Moreover, many services appeared in more than one category, sometimes within the same discussion, as people interpreted and re-interpreted what a service might be doing for people.

Second, it was common for participants to consider services as human processes that have an effect on nature, rather than as the benefits provided by nature to society. For instance, one participant said *'I think we need to enter re-cycling under supporting'*, another asked *'what are houses doing for ecosystem services?'*, and further, *'society; does that come under supporting?'* In turn pollution was perceived by one group as a negative service from humanity to the environment.

In the main, what we can say is that many participants initially found the terminology overwhelming. It was *'not that easy to take it all in'* as one put it. They viewed many of the concepts and examples of services as quite scientific

and technical in style and emphasised in their responses the problem of jargon and inaccessible language. Some criticised the framework as rather elitist, with one imagining that the concepts were probably invented and used by *'kind of, someone in a university department'*. They suggested that the framework would be unclear for lay people; many would not intuitively understand examples of services expressed in exclusively scientific terms (e.g. sequestration). Overall, there was a small but vocal subsection who felt that the concepts and framework were intimidating and that the underlying intentions of the framework were obscure (*'struggle to understand what the point was'*):

> ***'Just some of the big words that I don't really understand'***
>
> ***'I don't know. Anything over two syllables, I'm lost'***
>
> Birmingham, Event 1

> ***'It's very jargon-y'***
>
> ***'It's too much for me'***
>
> ***'At first it felt a wee bit daunting because it was just all there'***
>
> ***'I think a lot is quite intimidating. I don't know about anybody else, but for me especially, because, like, I think it is the wording of stuff, and what they're aiming to try and do. I don't really understand it all'***
>
> Glasgow, Event 1

They questioned the potential for the terminology to be used with the general public if there was an intention to promote broad societal engagement with environmental issues through the NEA. *'Don't build a public information campaign on it'* one group advised if the intention was to influence environmental behaviours of *'ordinary'* people or make environmental issues accessible to people with *'different social status'*. Those from *'lower educational background'* would probably have limited ability to understand scientific terms (sic) and it would be difficult to win over those *'who don't really care'* about the environment.

Some participants argued that the *'common sense'* premise of the framework needed to be made clearer. As one put it, the framework has to *'lose the gobbledygook'* in order for the logic to become more accessible. One reflected, *'I guess when it's broken down some of it probably is quite simple, but it seems quite scary when it's all presented in a scientific way, I suppose.'* For some participants common sense terminology for ecosystem services would be simply *'natural resources'*, and for ecosystems the *'natural environment'*. Moreover if used within the wider public domain participants argued that the work of the NEA would benefit from having more visual, and perhaps more humorous, representations of the difficult scientific terms and complicated ideas being conveyed by the framework.

3.6 Conclusion

When dialogue participants embarked on this process they encountered an entirely new type of language and a range of unfamiliar concepts. An important dimension of the recruitment strategy was that none of the participants had previously heard of the concept of *ecosystem services* or that there had been a *National Ecosystem Assessment*. It is therefore of note that, despite this unfamiliarity, and bearing in mind some reservations about language and philosophy, the phrases *'ecosystem services'* (sometimes coined by participants *'eco-services'*) and to a lesser extent *'ecosystem approach'* were used actively by many participants as the dialogue proceeded, with a small cohort picking up this language immediately. Moreover, early on in the dialogue group discussion frequently gravitated from the participants' sense of privilege of being introduced to, and asked to comment on, this *'ecosystem thinking approach'* towards the idea that the NEA's work needed to be communicated widely. As one participant put it when asked whether this type of thinking should be widely promoted: *'Abso-bloody-lutely'*. There were also a number of indications of the NEA's concepts and logic being actively used by participants in their everyday life, with many speaking of the framework and findings as messages to be taken home and communicated.

> ***'It's opened my eyes'***
>
> ***'I think it's a good way, yes. Get your head round it and, you know, recognise how it's all working. Where it starts from, where it's going, and what it affects'***
>
> ***'I'll be going back preaching a few of these thoughts'***
>
> Glasgow, Event 1

> ***'I've actually found myself using the ecosystem services framework in my own life sometimes. I've been discussing things with people. I've been driving past building sites thinking 'what's the effect of things like this'. So it's been quite eye opening'***
>
> ***'We're now building our own little ecosystem village in the back garden with uplands and everything and everyone's got to put a figure on it and everything, so it's just trying to get them to recognise and do more'***
>
> London, participants feedback

So, participants viewed the NEA as an invitation to learn and connect themselves more with environmental debates, and while some had important concerns, the NEA's work is welcomed in the main. In the following chapters we consider what participants made of the ecosystem services framework when specifically related to the process of decision making.

'Naturally Speaking …'

a public dialogue on

valuing and managing our environment

Dialogue Cartoons by Luke Warm

CHAPTER 4. INCORPORATING ECOSYSTEM SERVICES INTO DECISION MAKING

Summary

- Many of the qualities that participants associated with good decision making in managing ecosystem services were consistent with the principles of the Ecosystem Approach. This included prioritising and demonstrating long term public benefit of actions whilst building in appropriate safe guards for nature, building a strong scientific evidence base to help inform decisions, and taking proactive steps to incorporate the views and practical know-how of the wider public.
- Participants considered a series of projects that are grappling with applying the Ecosystem Approach in real world contexts. Key strengths of the approach included its positive, inclusive and holistic outlook, the encouragement of best practice according to guiding principles, and encouraging more natural solutions to environmental issues.
- Participants expressed a number of challenges for taking an Ecosystem Approach forward such as fostering awareness and engagement, creating a credible evidence base, capacities to implement and achieve goals as well as maintaining and financing long term commitments and monitoring outcomes.

4.1 Introduction

In this chapter we explore participant views on the challenges and opportunities that arise from attempting to incorporate consideration of ecosystem services into decision making. We first consider how people characterised the qualities and goals of good decision making with respect to the management of the natural environment and we then examine how these aspirations are reflected in practical applications of NEA-style thinking. Our insights are based on findings from two activities conducted over the first and second days of the dialogue.

4.1.1 Making the connection between ecosystem services and decision making

The first of the activities was an exercise in which participants were asked to evaluate options for the management of a hypothetical landscape from an ecosystem services starting point. Our particular concern here was to understand how participants rationalised the challenge of incorporating consideration of ecosystem services into decision making in an un-primed way. That is to say, we offered participants no *a priori* framing of what is currently represented as best practice in decision making about ecosystems services; namely the adoption of the ecosystem approach. By challenging participants to think about decision making and ecosystem services on their own terms, our reasoning was that we could begin to draw out underpinning concerns and aspirations that could then be explored in the context of emerging models of real world practice.

Each group was asked to tackle a challenge that reflected their particular habitat focus for the dialogue, and these are summarised in brief in Table 4.1. In summary the interventions were: increasing agricultural production; building new homes; improving surface water quality and increasing aquaculture production. Alongside these challenges participants were presented with two ways that decision makers might think about achieving these objectives, together with a list of pros and cons for each option, as well as a general description of the current situation listing implications for ecosystem services affected by each of the interventions. A depiction of ecosystem services across a landscape accompanied these materials (see Figure 3.1 landscape cross section) and was used as a reference point to help inform their choices. The exercise required participants to respond to the scenario with minimal relevant context. Participants were asked simply whether they understood the choice the group was being asked to make and prompted for their reactions to the options: why and on what terms an option might be chosen (including whether there might be an alternative); how the ecosystem services might be affected by the decision process; and what uncertainties or issues would need to be addressed in order to be confident in a decision.

4.1.2 Exploring exemplars of current practice within decision making

The second of the activities involved consideration of a series of projects that are grappling with applying the ecosystem services framework in real world contexts, some of which have been explicitly flagged up in the NEA as exemplars of good practice. Importantly, at the heart of many of these projects is a concern to apply the principles of the Ecosystem Approach to inform and guide how the ecosystem services framework is applied to decision making. These principles were developed under the

Table 4.1 Summary of hypothetical decision scenarios

OBJECTIVE	OPTION 1	OPTION 2
Increasing agricultural production	Intensify existing agricultural units by increasing the use of fertiliser on crops and livestock numbers on the fields.	Establish a new area of agricultural land for crops and a new area of land for livestock
Build 300 new homes	Utilise open spaces within the existing town boundaries ('infilling').	Create a new urban development on the outskirts of the town
Improve surface water quality	Treat water to remove pollutants at water treatment stations	Manage upland peat bogs and lowland wet grasslands
Increase aquaculture production	Intensify existing fish production by increasing fish stock per cage and numbers of cages.	Establish a new area for aquaculture.

Convention on Biological Diversity,[8] and have since been refined by the Defra.[9] Applying these principles is a key part of how the NEA imagines the ecosystem services perspective will be adopted and embedded in practice. The process involved specialists from a series of locally relevant projects presenting and discussing their work with the participants, together with introductory presentations and stimuli that contextualised these activities in terms of the principles of the approach[10]. Groups were introduced to all projects but discussed one example in detail reflecting their particular habitat focus. These projects are summarised in Table 4.2.

By drawing on projects from in and around the dialogue locations our aim was to animate the logic of the NEA in terms relevant to the participants and to scrutinise in a more tangible way whether and on what terms NEA thinking is considered an essential, acceptable and practical basis for decision making about the environment, and importantly where key sensitivities and challenges might arise in taking this thinking forward into decision making.

The exemplar projects discussed were at varying stages of fruition, but all shared aspirations to approach decision making from an ecosystem services starting point. Recognition of the principles of the ecosystem approach looms large with their work. In this chapter we consider all but one of the projects addressed in the second round of the dialogue, the exception being a 'payments for ecosystem services' project on water quality that is explicitly addressed in Chapter 7.

4.2 Complexity and values in decision making

When relating the ecosystem services framework to decision making many participants argued that the environment can be managed for a range of different purposes and acknowledged that decisions are made in the context of a range of trade-offs and alternatives. They viewed the framework as a helpful way of animating the complexity of making decisions, but also agreed that decision makers face an unenviable and challenging task to accommodate this complexity into their work. When approaching the hypothetical exercise participants were initially quite overwhelmed by the sheer number of issues and questions the framework encouraged (*'a minefield!'*), to the extent they initially felt disempowered to make a judgement or that the framework invited impossible choices:

> ***'It makes me not want to do it'***
>
> ***'It would put me in a difficult position'***
>
> ***'You're damned if you do, and you're damned if you don't'***
>
> ***'Scared to make the wrong decision'***
>
> Birmingham, Event 1

Yet, as they went along participants also enjoyed the *'puzzle'* element of applying the framework to think through issues. They were stimulated by the interconnected nature of issues and felt the framework opened up different perspectives on the environment and encouraged debate: *'You begin to think what the land is doing in terms of services. What are the services we need to protect? Where should we then prioritise food?'*.

[8] http://www.cbd.int/

[9] http://archive.defra.gov.uk/environment/policy/natural-environ/documents/eco-actionplan.pdf; http://archive.defra.gov.uk/environment/policy/natural-environ/documents/healthy-nat-environ.PDF

[10] Principles were simplified to remove jargon and be easily comprehensible by participants.

Table 4.2 Summary of dialogue case studies

LOC.	PROJECT	LEADERS/KEY PARTNERS
EXETER	Upstream Thinking/(PES)	*South West Water*
	Upstream Thinking is a new approach to improving raw water resources. The aim of the project is to improve raw water quality and manage the quantity of water, at source, long before it reaches water treatment works, by improved land management.	
	Marine spatial planning	*Marine Management Organisation*
	Marine spatial planning is a process that brings together multiple users of the ocean – including energy, industry, government, conservation and recreation – to make informed and coordinated decisions about how to use marine resources sustainably.	
	Northern Devon NIA	*Natural England/Devon Wildlife Trust*
	The Northern Devon Nature Improvement Area is one of 12 nationally important landscape-scale wildlife schemes across England. It specifically aims to restore culm grassland and woodlands, create new wildlife habitat and improve water quality.	
	Spatial/local planning	*North Devon District Council*
	The North Devon and Torridge Joint Local Plan is adopting an Ecosystem Approach to help shape the statutory framework for the future development of the area.	
BIRMINGHAM	Green/blue infrastructure	*Birmingham City Council*
	As part of the development of the City's Local Development Framework a Green Infrastructure Strategy has been developed which applies the Ecosystem Approach to the city's network of green and blue infrastructure.	
	Catchment-based approach (Fowley Brook)	*Environment Agency/ Stoke city council*
	The Fowley Brook project is building capacity for a catchment-based approach to promote the flood risk, water quality, biodiversity & recreational potential of Stoke, as well as promote economic regeneration.	
	Marine spatial planning	*Marine Management Organisation*
	(As Exeter)	
GLASGOW	Seven Lochs Wetland Park	*GCV Green Network Partnership*
	Glasgow and Clyde Valley Green Network Partnership, Glasgow City Council, North Lanarkshire Council, and the Forestry Commission Scotland are working together to develop the Seven Lochs Wetland Park as a place for people, nature and heritage	
	Glazert pilot catchment project	*Scottish Environmental Protection Agency*
	The Scottish Environment Prevention Agency is developing the River Glazert project which is using an Ecosystem Approach to restore the river to a more natural state, but at the same time to help alleviate flooding.	
	Carse of Stirling Pilot Project	*Scottish Natural Heritage*
	The Carse of Stirling Project has piloted a method for using the Ecosystem Approach within south west Stirlingshire to involve a range of people in exploring land-use options and to prioritise and deliver benefits from nature.	
	Firth of Clyde Ecosystems Project	*Firth of Clyde Forum*
	The Glasgow and the Clyde Valley Strategic Development Planning Authority are using the Ecosystem Approach to promote natural solutions to environmental change, including flood risk management, water quality, biodiversity and recreation.	

As participants articulated, prioritised, and ultimately passed judgment on this complexity it was noticeable that they routinely reflected on the idea of 'values': how values about the natural world should be characterised, and how they should be used to inform decision making. Their reasoning cohered around two central points

First, when thinking about the ecosystem services framework as a tool to inform decision making, participants again returned to the point that the environment underpins all dimensions of human life and that people should consider its protection an imperative for continued human existence on Earth. This reasoning often resurfaced as an underlying concern that the framework may make the environment optional; that universal values for the natural environment might be erroneously set against other, less important, considerations. Because the environment was considered to play a foundational and non-negotiable role in human well-being, it was common for participants to speculate openly about the extent to which the environment should be seen to *'trump'* other concerns; that is, something that dictates the common good and is more important than *'anything'* and *'everything'* else. It is of note too that, at a latter point in the dialogue, this point was reinforced when participants were presented with a government sponsored analysis of public policy priorities[11], which ranks the environment 18th out of a list of 30 issues. Reflecting on this, one participant observed:

> ***'One thing that concerned me about this, you know when that first chap from DEFRA showed us that bar chart and he showed us where concern for the environment came. It came quite a long way down the list which, to my mind, shows that the people don't really understand that it forms the very building blocks of everything, they don't kind of get it. Don't get me wrong, I totally understand why racism and immigration and education and housing and all of that came before it. But actually if you actually think it through it should be a lot higher up the area of concern. And if it isn't, and if that is some sort of survey because I had lost the plot a bit then and I don't know where he got the information from… [ ] …So it kind of shows that people don't get it. They don't get about clean water, pollination and how that would affect everything. How that affects the food that you eat and where you can build, flooding and the rest...[ ]…they don't get it [ ] Because if they don't get it they won't be interested in doing anything about it. If they are more concerned about policing in their area, which I understand is big concern, they are not giving the weight and they are not giving the importance to it because they don't understand it, which I get. But it's the very building blocks of everything. Without it one day there will be nothing to police, there will be no one to feed nor houses to live in because that's where it would go … you know to the very end'***
>
> London, Day 2

Second, and what runs alongside these reactions, is a concern to understand underpinning motivations with respect to the environment. Values about the natural environment are considered multiple, highly interpretative and shifting. People are considered to have different value systems and this means they are likely to prioritise quite different concerns with respect to how the natural environment is managed for different kinds of benefit. An early example used by participants was to contrast an economic/business perspective on nature's value with either a spiritual/religious or a community perspective.

> ***'I think people will categorise themselves in certain areas as well, I mean overall we're all in there, but let's just say that I'm a particularly religious or spiritual person, then that part of it is going to be important to me […] Equally, if I was a business person, then the other bits might be important to me, so it is all important as a whole, but I think if I've got a particular bias, then I think I would hone in on that one area and, if I put impact into that, it would ultimately affect everything else as well'***
>
> ***'Different values are dependent on what your motivation and focus is. So I think dependent on what you represent is dependent on how you value sort of certain areas and that to me is, it is going to be hard to get a balance then because what one person values as being important and, you know, should be preserved or, you know, it may not be what another sort of department or, you know, do you know what I mean? …So it is who gets to decide that, you know, that final [value]'***
>
> Birmingham, Event 1

The way in which different values might be treated in decision making was thus closely linked to the dilemma of 'trade-offs' and how these are arbitrated. Participants

[11] https://www.ipsos-mori.com/researchpublications/researcharchive/3455/EconomistIpsos-MORI-September-2014-Issues-Index.aspx

highlighted a general need to acknowledge knock-on effects and alternatives in decisions. Yet decision processes are unlikely to yield simple right or wrong answers. They questioned who would provide and represent values within decision making and suspected that the values of vested and powerful interests, typically business (and often specifically land developers), are ultimately weighted higher than others, (*'us menials'*).

4.3 What characterises good decision making?

Overall, when thinking about decisions from the starting point of ecosystem services, participants emphasised the need to:

- *Prioritise the long term public benefit over short term economic interests*. It was common for participants to question the motivations and interests that lay behind the need to act and on what grounds any change is presumed necessary. They emphasised that actions should offer a long term public gain, and this meant prioritising the protection of nature within decision making. They saw risks in decision making being driven by financial concerns and involving commercial interests and were concerned that rights to access fundamental public goods from nature would be jeopardised by short term interests in profit.
- *Utilise scientific evidence to help inform decisions*. Participants viewed expert science as a way of helping to rationalise the challenge of dealing with complex and uncertain problems. This included informing understanding of why certain ecosystem services would be prioritised over others and clarifying the otherwise hidden knock-on effects of actions. They wanted scientific information to be transparent in its methods, and independent, rather than wedded to a particular interest group. They did not believe formal scientific expertise can solve the rights and wrongs of decisions alone. They saw this expertise as contributing to a wider body of knowledge and emphasised the need for pluralistic forms of evidence that can deal with decision making complexities.
- *Involve the wider public in decision making*. Participants highlighted the involvement of local communities and beneficiaries in particular as an important condition of good decision making. There was a need to look beyond scientific research findings and expert knowledge, and to avoid over-reliance on decisions being taken from above and at a distance. They argued that people have the right to be involved in decision making processes concerning activities that impact upon their lives and that people bring knowledge and innovation to the way decisions are made and actions framed.

- *Build in appropriate regulation and monitoring*. Participants were concerned that interventions should be properly regulated and monitored and viewed the state as playing an important oversight role to ensure actions conform against agreed standards and further that commitments are carried through. They tended to imagine scenarios in which independent bodies are set up by government to assert control of processes, particularly where private actors were involved, (cf. Chapter 6 on the potential role of the third sector)

4.3.1 Prioritising long term public benefit over short term economic interests

When confronted with applying the framework to the hypothetical situations a common starting point for discussion was to question the underpinning necessity for change (*'why do we need to make the decision?'*) and specifically, the need to make choices about interventions that presumed the environment had to either *produce more of something* (e.g. more fish, more food) or *accommodate more* of something (e.g. more homes; more measures for water quality):

> ***'Why, first of all, do we need to increase fish production? Where's that decision come from?'***
>
> ***'The problem is that they want to increase their supply but we don't know why. To do that they've got to increase the harm that they're doing in all areas, so that's the water quality, the quality of the fish that they're producing, the environment that it's in, but because we don't know what the driver is, it's hard for us to make a decision as to whether or not it's acceptable'***
>
> Birmingham, Event 1

> ***'How do we know we really need 300 homes?'***
>
> ***'Before I'd make a decision, I'd want to know what is the demand […] is it really needed?'***
>
> Exeter, Event 1

> ***'Population increase, why is there going to be another 300 houses?'***
>
> Glasgow, Event 1

For many participants, decisions were not simply choices between *better or worse* interventions, but choices about *doing things or not*. They expressed a need to understand the underpinning motivations that were driving the decisions and argued that the environment should be seen *a priori* as a common good and therefore protected. They often asserted that people have the right to access ecosystem services, such as the provision of clean air or water, access to open space, and importantly, that the state had an important role to play in ensuring their availability. Indeed, participants were often concerned that the decisions under consideration might be driven by short term interests, and in particular, by generating profit for business and the wider economy. They expressed scepticism about whether decisions such as those proposed in the examples could be made in favour of the environment, since under the current capitalist system *'money talks'*:

> ***'It's sometimes, I think, a question of short-sightedness, against long-sightedness, who will take the long view for people, and for industry […] who will take the short view for financial gain?'***
>
> ***'At the end of the day, it seems to me that the majority of things are profit driven. While you might talk about the underclass, I'm convinced that there is an over class, even above government, and all they're interested in is the profits that their multinational conglomerate makes'***
>
> Exeter, Event 1

It was therefore common for participants to speculate whether the choices under consideration in the exercise were being driven by financial gain:

> ***'It's one thing to have people who are starving, so you go, 'Okay, do you know what? We'll lose that beautiful area because people are starving.' It's another thing to say, 'That company wants to make more profit so we will lose that beautiful area'***
>
> Birmingham, Event 1

> ***'I'm just thinking, again, we don't know who wants these houses built. Is it some fellow with white sticks? {Sic] Is it somebody coming in to make money, or is it actually a community need? I don't understand'***
>
> Exeter, Event 1

For one participant, it was *'almost like the economy is in battle with the environment'* and that there was need to strike a balance between economic and environmental concerns:

> ***'To me it's a balancing act. It's all right saying the environment, but you do need industrial jobs and manufacturing. I mean, Britain's tried to push more jobs into manufacturing, because of, you know,***

the spread of type of work. I mean, it's getting a balancing act, between the environment and reality'

Glasgow, Event 1

It is of note that when questioning the role of private/financial interests in the proposed interventions, many participants took the opportunity to criticise the way current economic practices obscure real production needs and effectively induce artificial demand. One participant argued for instance that *'we should think about real demand and not supply'* because the more supply is increased the more people would consume. Within this they criticised current consumption habits; *'we are a throwaway society'* and there's *'almost too much choice'* around us. Participants often orientated discussion towards a 'demand side' approach. Although the ecosystem services framework may be used in conjunction with strategies to increase food production or build more houses and infrastructure, it was frequently said there is a need for society to reduce food consumption and wastage, and tackle population growth instead.

Participants also put a lot of emphasis on companies and the private sector taking responsibility to protect the natural environment of the area they ultimately make money from, but they were sceptical about prospects for action: *'It's going to cost a lot. Is a company going to spend that much?'* They used the dialogue scenarios to express suspicion about why an industry would adopt environmentally friendly alternatives than cheaper, cost-effective solutions (*'Is that a purely economic decision because they can't be bothered to look how to improve their existing situation?'*) and suggested that companies may respond to environmental problems or challenges by offering solutions on a minimal or small scale. They questioned the hypothetical examples in terms of whether intentions would be genuine or just doing *'lip service'* and being *'for show'*. Speaking of the challenge of increasing aquaculture one group reflected:

'What are their responsibilities?

'They have social and environmental responsibilities.'

'To keep the environment, that they're breeding the fish in, clean'.

'To eliminate disease by not just giving antibiotics because it's the easy solution, but looking for other solutions rather than just using antibiotics'.

'To consider the financial and, well, the effect of their decision on other sectors, so for example if it's profit-based, this might make the fishing more profitable but kill off the farming.'

' You're right, if it's purely profit-orientated then look for other ways of increasing their profit that's more sympathetic to the environment they're working in.'

'We need to know what responsibility the people who wish to increase the fish production are going to take for putting their own house in order, and finding solutions to their created problems, before anything else is agreed to. How do they propose to solve the problems that have already been identified?'

Birmingham, Event 1

While application of the framework could yield benefits when the purpose behind any intervention is 'right', participants saw a risk in exchanging the inherent public value of the environment for low quality, ephemeral goods. So for instance it was argued:

'Why would you want an inferior product that costs you so much, as in it's costing you the earth, it's costing you the views, and it's costing you peoples' lives…'

'Why are we so hung up on quantity not quality?'

Birmingham, Event 1

In sum, a prerequisite of decision making should be for any development or action to demonstrate a clear commitment to delivering benefits for wider society and future human well-being. For instance, speaking of options to intensify agricultural production one participant suggested:

'I would go with [option] number two [extending the area of agricultural production], but the trade-off would have to be something that is really, really going to benefit the community; something that is going to benefit all […] the community and the land'

Exeter, Event 1

In many cases doing nothing seemed the most preferable solution. For instance new development may just *'tip the balance'* and participants asked why we need to *'rock the boat'*:

'I would say do nothing, they can make their money another way. If it's that people are starving, I might look at it a bit differently, but I doubt that they are'

'Some of these buildings … they're only there to make a profit, aren't they? Are they going to build them and lose money?'

Birmingham, Event 1

'I think if that was, like, a see-saw on a balance, if you put another 300 houses it would knock it off balance. That seems to be able to sustain itself, the way it is just now. I think it's not sustainable'

Glasgow, Event 1

4.3.2 Utilising scientific evidence to help inform decisions

A common thread of dialogue was that decision making processes need to accumulate knowledge and views from a range of parties and relevant sources. In the course of the exercise, one strand of this was for participants to speak of decision making being informed by a strong, independent and transparent scientific base. They spoke of science in terms of supplying information of a factual and numerical kind (*'We need statistics and, you know, figures, facts'*) and valued this highly as a context in which solutions might arise (*'all these scientists must have answers somewhere'*). In general, groups spoke of the scientist as a sympathetic figure in policy and decision making, trying hard to convince sceptical politicians:

'The whole point of it is to make it clear and easy for politicians to make proper decisions. So the scientists don't make decisions. They do all the hard work, and someone else makes decisions that they're not really informed about'

Glasgow, Event 1

More specifically, participants variously suggested that scientific information could inform discussion about the practical feasibility of proposed actions, their potential impact on people and livelihoods, and what benefits might be procured. Some explicitly noted that in order to evaluate the trade-offs of action scientists could help inform a clear baseline assessment which measured what was currently there and how services would change in the long term.

At least in part scientific experts were considered to play an important role because these sorts of decisions represented complex situations and *'there may be factors that influence things we didn't even know about, we didn't even realise'*. They suggested that scientific evidence would need to be available to ensure that the knock-on effects of actions were made fully visible for decision makers and to assist in justifying the prioritisation of one service over the other. So for instance speaking of the management of marine systems for aquaculture an indicative comment was:

'Well, you know, you would want to know how it will affect the population of the fish, wild fish. You've also got people that are catching these fish as a living, wild fish, how it will affect them by increasing these, how it will affect your local area, your beaches, and the rest. […] and obviously the more it is, you're putting antibiotics and stuff like this in the river, you really need to have expert opinion on whether it's likely to affect these situations, don't you?'

Exeter, Event 1

Yet participants were also concerned about the reliability of scientific evidence. *'How much can we trust the science'* that informs the interventions, and *'how can we be sure that what they do is actually good?'* How can we know, *'what's behind the beauty'?* It was common for participants to use the examples to express mistrust with the process by which scientific evidence is often interpreted, used and portrayed (particularly in the mass media) by politicians and private companies:

'We are lied to. The cynic in me would question, when all this information is put together and politicians get their hands on it, they will use it to their own ends. They will tell us what they think we want to hear.'

'It's all about interpretation and how somebody interprets it. At the end of the day, you can have as many people's opinions as you like, but it's how that one person interprets your answers.'

'It's whether somebody actually takes the ball and runs with it, really, isn't it? Is actually anybody going to do anything about it? Are they all going to just vocalise about it in parliament? You see them bandying it about.'

'It's as though they manipulate it to see their own ends.'

'Is somebody actually going to do something about it?'

'You know, I think, are they going to manipulate it for the benefit of all or just for their political masters'

'You must have to have so much information, and who do you trust with the information? They are all going to have their own agenda. […]'

'They all have their own interests'

Exeter, Event 1

Participants were also concerned that consideration of these interventions against the framework of ecosystems services would introduce a lot of uncertainty in and of itself (*'Could it be that we don't actually know what the consequences are though? Unless you actually do it, we don't know.'*). They spoke

frequently of the need for decisions to be informed by up to date evidence and the importance of providing information that was sensitive to the time and space of the problem. The use of knowledgeable local experts to help collect and evaluate the available evidence was a strand of this. Moreover, in order to evaluate the multi-dimensional aspects of the intervention and minimise risks arising from a trial and error process it was suggested that it would be helpful for decision makers to seek advice from places where similar interventions had already been applied, both nationally and in wider comparative contexts).

4.3.3 Involve the wider public in decision making

In the exercise participants frequently questioned how and on what terms the public would play a role in these decisions. For evidence to be considered sufficient in these situations it was common for participants to suggest the need to look beyond scientific research findings and expert knowledge, and to avoid over-reliance on decisions being taken from above and at a distance. They argued that *'it would be good if people that were making decisions about an area actually lived in that area'* and involving local publics in decision making was considered an imperative. Decisions about the natural environment are complex and affect human wellbeing and therefore *'you need to ask a lot of people for consent'*: *'What do people in this community want? What are they saying? That's the other thing, because we don't know, do we?'*

Yet this concern extended beyond citizens having the right to be consulted about decisions that directly affect their lives. Although local citizens should be given the opportunity to discuss priorities and accept or reject any change, they could also provide salient knowledge about the environments within which they live and operate; they could provide information about needs and preferences but also offer practical ideas and suggestions about the interventions. This lay knowledge should not be overlooked or discounted; it can help complement more formal/expert information.

For the participants, engaging the public should be a process where all *'sides'* of the community are represented, where citizens are exposed to the alternatives and pros and cons are explained, and where they are given the opportunity to decide and shape options based on their knowledge of the area and peoples' needs:

> ***'I'm just saying, they should go and see the sites before, and listen to the people that live there before they do something.'***
>
> ***'Yes, because where we live… right, you know what you need in your areas where you live, what's good here, what's bad here; that kind of things.'***

'Bringing the community into it then isn't it really?'

'I think as well, not just listening to the communities, but also making sure that the communities understand what the pros and cons are.'

'I think it's good from the point of view that you've drawn people from all parts of the community, and that's what you need'

'I suppose you have to then ask the people in the town what their views are on it. Do you open it up therefore to a forum to ask questions?'

'You'll probably have to have a meeting and invite local people'

Birmingham, Event 1

In the some of the groups, participants used the examples to speak of the potential for a democratic deficit in decision making. They were concerned that consultation around these types of decision would be essentially artificial and that there is a need for decision making processes to go further in involving the public:

'There is a philosophy of thought which says if you've made up your mind on what you're going to do, why bother having the consultation anyway. I get the distinct impression that it's not like this, they're telling you this is the way forward. Yet, sometimes they make vast changes because of problems they've overlooked. […] In the end, a consultation has got to be a true consultation, if the people involved are going to have an input in the planning making decision'

Exeter, Event 1

In addition participants maintained that the public might offer innovative alternative solutions that experts may not believe can work. Engaging people from diverse backgrounds would increase divergent thinking. It would bring new ideas and encourage innovation. Participants offered a range of innovative ideas to demonstrate their point, albeit rather overoptimistic solutions, such as the idea of creating *'floating farms'* to increase food production, or some not very sustainable ones, such as the idea of *'reclaiming some land from the sea'*. Participants also conveyed that public participation does not come without its problems and challenges. In order to have meaningful discussions *'you've got to educate the general public, too'*. They recognised that the general public can hold highly partial opinions, not least because they are usually influenced by *'what politicians want to tell us'*, and could easily *'get into political arguments'*. And they were concerned that broad and deep engagement would be *'such an expensive procedure'* and it takes a lot of effort to co-ordinate effectively on a large scale: *'can our democratic process handle these kinds of decisions?'*, and how far should one extend the principle of public involvement:

'How far do you take that? […] How much money do you spend on doing a consultation like that? How far do you go? It might be like Skeg Vegas (Sic), people from Birmingham go there, so do you ask the people from Birmingham? Where do you start? Where do you end?'

Birmingham, Event 1

4.3.4 The need for regulation and control

Finally, participants often raised issues of implementation and monitoring when reflecting on their choices. A particular intervention may be the best idea, and designed in the best possible way, but this would count for little if it not implemented and monitored properly. According to one participant, *'We need an environmental dictator'*. Again, the issue of 'who' was important (*'It's not a case of who designs it; it's a case of who implements it'* and *'who's going to measure the change?'*), and again, it was private/commercial interests that were the common objects of mistrust.

Some speculated that after a decision was made, every intervention and plan would need to be overseen by a publically funded authority to ensure legitimate and effective implementation. They emphasised that there would need to be *'a regulatory body that controls'* how these interventions were delivered and suggested that one of the factors that might dictate the desirability of the interventions would be precisely whether control can be subsequently asserted and maximised. An illustrative discussion was provided by a group discussing options to increase fish production:

'Have we got [to have] a controlling body over this kind of thing, like, you know, fish farming and whatever?'

'I think it should be controlled.'

'I think size should be controlled as we [go along]'

'They should have tighter control over the whole system. [Set a] controlling body and they'd have to answer to everything for that group of people'

'Well the government would have to appoint somebody.'

'Regulating body that can say, 'That's your job and you've got to do something about it.'

'Food regulators.'

'I think if there's going to be a solution it's got to be a long term solution …'

Birmingham, Event 1

4.4 Ecosystems thinking in practice: the Ecosystem Approach

The analysis above provides a general indication as to how participants think about decision making with respect to ecosystem services: what constitutes good decision making and the key sensitivities and challenges that surround this.

In this sub-section we build on this analysis by reflecting on participant views on efforts to embed ecosystem services thinking into practice. What preoccupies us here are issues surrounding the practical uptake of the Ecosystem Approach. Drawing on discussions where participants learnt about and shared views on a number of exemplar projects we offer further insight into the strengths and challenges participants associate with taking NEA style thinking forward into real world decision processes.

The key findings of this component of dialogue are contained in the series of summary tables below. Table 4.3 depicts the areas of reasoning that groups built up with respect to perceived opportunities and strengths of taking the Ecosystem Approach and of using the ecosystem services framework to inform decision making. Table 4.4 summarises key challenges and areas of concern. Finally, Table 4.5 draws out some of the key habitat messages to underline how the management of particular environments are governed by different preoccupations.

We built up these summaries by analysing how participants responded to and questioned the work of the exemplar projects. We grouped comments into emerging themes, while highlighting subtle variations in perspective. In all of this our focus was less to ask participants to evaluate and pass judgement – good or bad – on projects per se, but rather to use the projects as a resources for thinking about the philosophy, ambitions and methods of NEA thinking in practice and where people's aspirations and concerns lay. The findings of this analysis are interesting in the way they further reinforce a number of initial impressions of the ecosystem services framework and its capacity to inform decision making. Let us first consider general strengths.

4.4.1 General strengths of the Ecosystem Approach

Many of the conditions of good decision making participants offered in the context of the hypothetical examples above are reflected in the principles of the Ecosystem Approach itself, as is the holistic ambitions of the framework discussed positively by participants in Chapter 3. Perhaps unsurprisingly then, as participants learned about and discussed the practical projects implementing this way of thinking, so they offered broad support and endorsement of the principles.

First, participants appreciated the Ecosystem Approach for its optimistic and inclusive feel. Environmental issues are being cast in an encouraging light rather than the *'doom and gloom talk about the future'* that typically pervades reporting of these issues. The approach *'sounds positive'* as one put it. Importantly, participants perceived that everyone is being encouraged to have a view and a role in decision making (*'You've been smart enough to think, We need to*

Table 4.3 Strengths of the Ecosystem Approach

Positivity, inclusivity	The environment is being presented in a less 'doom and gloom' way; conveys to people positive change is happening
	Shows the environment is relevant to all sectors/walks of life
	Signifies that everyone is being encouraged to have a view and a role in decision making
Holistic in outlook & approach	Signifies to people that decision makers are thinking strategically. Tries to take all issues into account & evaluate the trade-offs; less fragmented
	Recognises that money should not be the only thing driving decisions
	Cultural aspects can provide an important counterweight in decisions
Practical advantages	Principles connect framework to a set of clear principles for action
	Promotes transparency and accountability & strengthens the environmental case by providing a clear reference point for evidence
	Potential to open up new revenue streams for protecting environment
Good outcomes for nature	Emphasises more natural solutions/encourages natural methods
	Will help to ensure that negative actions are offset by good ones
	Opens up possibilities for win-win situations and synergistic benefits

take into account who's going to be affected by this and who are the main players'). The environment is being made to relevant to a wide range of sectors, as well as people from different walks of life. A key reported strength of many of the projects was that they were drawing in a broad constituency of people and this was perceived to generate new ideas and encourage innovation.

Second, participants gave a great deal of credit to practitioners for thinking about the natural environment holistically. They saw a conscious effort in these exemplar projects to take multiple issues into account and evaluate trade-offs in a systematic way:

> ***'We've put a lot of ticks throughout the whole thing but I think yes…[ ]… all ecosystem services are considered and appropriate actions are taken for the maintenance. That's what we were discussing regarding the fact that they've looked at exactly***
>
> ***what is going to be affected. They've looked at exactly where the shipping is and where everything, so they pretty much know what-, they've considered everything. They've seen where it needs to be placed and they've looked at, what you were saying, the best place to put it because of the tide and all those things. It seems like it's been looked at'***
>
> Birmingham, Event 2

> ***'Takes into account all those issues that people are going to be concerned about.'***
>
> ***'It's a wider approach.'***
>
> ***'It's more just, isn't it?'***
>
> ***'It's higher profile.'***
>
> ***'It's taking into consideration everybody and the environment and your neighbours.'***
>
> Exeter, Event 2

The approach appeared holistic partly because it was recognising the cultural dimension of management (*'surprised [pleased] about the cultural services part'*), and recognising that financial interests are not driving many of these processes, although as we shall see below, participants continued to be concerned about the potential role of private interests in the provision of ecosystem services. A number of participants saw the Ecosystem Approach as a means of compensating for poor practices and impacts (*'you can start to include this in your offsetting'*).

Third, participants saw many practical advantages in this way of thinking. They Viewed it as a positive that the ecosystem services framework has been tied to a set of clear principles for action against which projects and process can be judged. This is perceived as a real strength in terms of promoting transparency and accountability and making the environmental case by providing a clear reference point for evidence.

Table 4.4 Key challenges for the Ecosystems Approach

Fostering awareness & engagement	Approach may only be picked up by 'switched on' stakeholders
	Stakeholders and publics may find it hard to grasp the overall point and rally around it.
	People may object to some of the valuation instruments being applied, and see the Approach as an exercise in giving public money to wealthy land managers
Creating credible evidence base	Scope of Approach means it is difficult to maintain an up-to-date evidence base
	Sheer complexity of issues may lead applications of Approach to 'cherry pick' services
	Salient local knowledge may be lost in the quest for standardised evidence
Implementing & achieving goals	Complexity of issues being assessed may impede clear aims and purposes being set.
	Applications will potentially be overruled, derailed, diluted and slowed down through ignorance or competing interests
	May encourage congested decision making leading to co-ordination problems and duplication of effort
Future-proofing activities	Difficult to maintain long term commitments to project goals as interests, priorities and land ownership changes
	Challenge to ensure outcomes are properly monitored, adhering to agreed practices,
	The bill for ensuring future maintenance may fall on local tax payers.

> ***'I like that they have a point of reference and they need to almost give reasons for why they're keeping things and why they're not. It makes their actions more accountable. I like that'***
>
> ***'It's more transparent somehow, their decision-making'***
>
> ***'It's something to use as a reference, isn't it?'***
>
> ***'The main key point is that they have something to use as a reference and something that makes them more accountable to their action'***
>
> Exeter, Event 2

Again, notwithstanding sensitivities around financial imperatives driving decisions, participants also felt the approach might help procure more resources/revenue streams for promoting a sustainable cultural environment as projects start to take this 'bigger picture' view of the environment.

Fourth and finally, many saw the potential for a good outcome for nature. Applications of the approach were seen to imply that decision makers are focused on natural solutions and encouraging natural methods. The sense that the approach is governed by looking across a range issue was also seen to enable the possibility for win-win situations and synergistic benefits.

4.4.2 Key challenges of the Ecosystem Approach

There are many challenges that participants suggested may impede progress around the Ecosystem Approach. In our analysis we arranged these challenges into four key groupings. First, there is the challenge of fostering awareness of and engagement in the Ecosystem Approach. When discussing the example projects a number of participants expressed concern that adopting the ecosystem approach was too reliant on voluntary action and behaviour:

> ***'However much you want to do it, if there is nobody actually saying "Yes, this is what we've got to do"…'***
>
> Exeter, Event 2

> ***'It's like the government have said, 'Right, we want all of our rivers and locks to be at a good standard, but we're not really… We don't care how you do it.' They're not really giving you the backing that you need for you to really get people to stand up and listen'***
>
> Glasgow, Event 2

They wondered too whether the approach would only be picked up by 'switched on' organisations and individuals and questioned whether all government departments were signing up to this way of thinking or whether land managers could be persuaded to engage with this new outlook:

> ***'I think a lot of people are threatened by change, but trying to get through to people that it's actually the way forward rather than the way back'***
>
> ***'A lot of people are getting the mentality of why fix something that is working? Obviously naturally speaking it's not working […] They seem to be coping, but obviously the bigger picture is that it's not [working]'***
>
> ***'You can see why they would maybe be a bit reluctant, but you've got to try and get them to see the benefits and stuff. "Do you know what? This could benefit me in the long term and benefit my family in the long term"'***
>
> Glasgow, Event 2

Participants discerned that they were engaging with projects that are leading policy and practice and they naturally asked, to what extent were these approaches being adopted and thought about more widely (*'So I worry that it's not going to be, you know, a universal thing in the county, which I think is a shame'*). They also asked about the extent to which there are real political commitments behind the agenda (*'I think it should be an expectation of all local authorities to implement an ecosystem approach'; 'Do these plans change depending on which, like, council?'; 'Could that change with a different government?'*). An interesting dimension of this was that politicians, particularly elected members of local councils, were seen as key actors needing to be educated in the Approach, since they were likely to control budgets and may be tempted to cut the environment from local authority agendas. More generally some suggested that ecosystem services and the Ecosystem Approach were hard concepts to rally the public around. They felt that this thinking needed to be branded in a way that was more definitive and identifiable so people could immediately grasp the concepts and engage. This included playing on the links between environment and history:

> ***'I don't know if it's relevant, but we're all aware of the recycle symbol, and it's sort of like-, I'm with public awareness, all these different areas today, the woodlands, the water, the marine, if there was like one symbol that kind of wrapped up the whole national ecosystems services that everyone was aware of, people would start to question, 'what's that symbol?' That relates to protecting all these different areas. We all know that recycling now. We all recycle, we all just do it.'***
>
> ***'That's a great idea.'***
>
> ***'Something visual that everyone sees, a stamp. You could have an umbrella.'***
>
> ***'The only thing that I think on this one, might be just to play on the history side of it. Appeal to people,***

> ***the fact that it's the way it was, that is the way that the countryside naturally was, and would be if we left it alone. I would maybe – the only thing on that is maybe the cultural side, like you say, cultural heritage'***
>
> Exeter, Event 2

Second, participants pointed to the challenge of building a credible evidence base to inform the approach. Participants interpreted the Ecosystem Approach as requiring a large data infrastructure, but when they made this point they expressed concern about how applications of the Approach would keep abreast of evidence needs. Some asked in this context: is there enough money to finance the underpinning research?

> ***'I think it is the government's responsibility to invest in such a thing to make sure that the funds are available for the research, for everything that needs to be done. If there's not enough money in the budget to research, whether it is going to have that much impact on the environment or that much impact on leisure or whatever it is then you can only do half a job. I think there is a government responsibility financially, but I think the responsibility for the decisions has to come from the people that know, i.e. because of the training, the studies, etc., but also from public opinion'***
>
> Birmingham, Event 2

Information was perceived to change very quickly; the NEA itself was already out of date, some said. Was there not a risk that evidence would be patchy and incomplete in reality? Was it possible to collect hard data on all these services? Might not supporting services be overlooked? Interestingly, participants suggested that because the ecosystem services framework is very much about creating standardised evidence then locally variable knowledge might be overlooked. Some also wondered how projects taking on the Approach came to focus on a small set of ecosystem services. They speculated that many of the projects taking place at the local scale might have wider effects and impacts and the wider context was not always clear. More generally, they wondered whether the need to take in so many issues, data and perspectives might actually stifle the setting of a clear aim for projects.

Third, there were a number of threads of discussion that related to the challenge of implementing and achieving practical goals. An important dimension of this was concern that local projects may be undone by governmental decision making at a higher level where interests are different or engagement with the approach and local goals is weak. In general they worried that in practice commitments to act will be slowed down and diluted by the influence of monetary concerns and economically powerful interests who see no advantage for them in this work. Within this there is some indication that participants worried the Approach would create a new subsidy culture for farmers and land managers; and that people might end up taking advantage of public funding streams.

> ***'I think the farmers are quite greedy though and they like to hold out to get the most they can. I think they're quite greedy'***
>
> ***'They probably think, "this is the council I'm dealing with, I'm going to get as much out of them as I can"'***
>
> Glasgow, Event 2

Creating partnerships was seen as positive but there were concerns that too many people and organisations may be involved in making decisions and there may be a duplication of effort. The approach faced a real challenge of weighing up and reconciling different stakeholder views. This may actually serve to choke progress (*'I mean it's a longwinded process, isn't it?'*). Some were also concerned that there appeared to be duplication of strategic effort from different delivery bodies. A wider question was where engagement would end under this approach. Some queried how these approaches would incorporate and weight the views of distant beneficiaries.

> ***'I think certainly when they go out to the wider public I think again how do you get that information from people? We've got a study group here, but I guess the views you are going to get are going to depend on who you are asking. Say, for example, I might have one view that I want to go out on a limb and save all the periwinkles on the coast but somebody else may not have a care and all they want are a load of amusement arcades. I guess it is a very different view about what you use that coastline in this example for'***
>
> ***'You know, somebody's view in Birmingham, which is as far away from the coast as you can get, for this particular thing is going to go, 'You know what, we want power, we want it clean, we want it cheap.' Somebody who lives, looking at that piece of coastline, is going to have a very different perspective'***
>
> Birmingham, Event 2

Fourth, and finally, there was the challenge of future-proofing activities. There was concern that in following a holistic approach the environmental component of decision making may be pushed into the future, and that business interests involved in the approach may renege on commitments and promises. Many participants repeatedly returned to the question of compliance and how oversight of projects would be achieved over the long term. They were concerned that activities being promoted under the approach may be high maintenance and that land managers would not be able to maintain their obligations to agreed practices. They questioned how commitments could be sustained over political cycles and noted that many of the examples were short term publicly funding projects and that this money eventually dries up. Some also pointed to the way examples of good practice seemed to be instigated by charismatic and committed innovators and worried whether projects could be sustained without those individuals. There was concern that wider partners and volunteers in these projects would be demoralised when funding disappears and interest wanes. They were also concerned that future maintenance would fall on local tax payers if and when money runs out:

> ***'I think a lot of people would be saying, "Okay, it's a pilot project so what happens once you've spent the money that you've been allocated for that? Who's going to maintain it? Who's going to clean it up? Who's going to do this, that and that?" That's where a lot of people will turn around and say, "Hold on a minute, is it the council that's going to do it? Is it going to affect my purse?" I think that's where a lot of people get doubt, Is it a good thing?'***
>
> Glasgow, Event 2

4.5 Conclusion

Participants in the dialogue developed a strong picture of how ecosystem services might considered in relation to the process of decision making. Applying the framework is recognised to be a significant challenge for decision making, and participants identified a range of issues that should be be taken into consideration in order to inform practice. They were impressed by the work of many projects that are exemplifying this thinking but they saw too many challenges and obstacles in ensuring decision making follows the principles of the Ecosystem Approach. The general direction of the dialogue was that these principles commanded broad support among participants. Summative reflections provided at the end of the first phase reinforce this view:

'These are strong principles to adhere to'

'It is important to take every principle in to account'

'The principles are all important'

'Can't think of anything I would add'

'Such an approach must be to the benefit of all'

'How do we engage humanity to take these on board in a serious way?'

'All political parties need to embrace these principles. Failure to do so will be a disgraceful failure to the people of this country and the world'

'Decision makers must have the courage of conviction to gain acceptability [for these principles]

'These principles should be used as guidelines and final decisions should be looked at to try to ensure it's kept as close as possible to them. The important principle is be flexible'

Written responses, Event 3

Thus the main challenge from the perspective of dialogue participants concerned issues of uptake: how these principles can be taken up and embedded, and how they can be sustained through projects and activities in to the long term. We return to these concerns in the overall conclusion to this dialogue.

CHAPTER 5. VALUING NATURE IN DECISION MAKING

Summary

- Participants saw many ways in which valuation techniques might be helpful within policy and decision making processes, but they also queried how valuation evidence is created, what it signified and what it can be expected to do. Participant views on the use of valuation methods had political, ethical and tactical dimensions and were often sensitive to the scale and object of decision making.
- Although participants expressed concern about associating nature with monetary measures of value, monetary valuation techniques were considered generally important tools for communicating and thinking about values within decision making; a tactically useful thing to do in terms of *communicating up* – pushing nature up political agendas and unlocking treasury budgets and *communicating out* – making nature's value clear at a broad societal level.
- The generic qualities of monetisation methodologies appealed strongly to participants. Monetary valuation evidence was generally viewed positively because it is quantitative and provides information in a *tangible, logical* and *uniform* format. They felt these qualities made the approach more transparent and objective.
- Monetary valuation of ecosystem services was interpreted as a necessary, but not sufficient, basis for decision making. There was felt to be a need to put valuation on a participatory (non-monetary) footing the more personal and proximate a decision becomes, and the more risks and uncertainties a decision seemed to be addressing. This means using methodologies that are sensitive to the cultural and historical context of change, appraising decisions from an ethical starting point and testing abstract facts with local stories and interpretations.
- Overall, monetary and non-monetary approaches to valuation were viewed as complementing each other in terms of their respective strengths and weaknesses. There was a very strong message, consistent with the arguments of the NEA, of the need to couple these approaches together to as part of an iterative valuation process within decision making.

5.1 Introduction

Throughout the dialogue process the theme of 'valuing nature' was an important focus of discussion, encompassing distinct areas of questioning and a range of stimuli. Participants were formally introduced to the idea of valuation in the context of general introductory remarks about the NEA, and with respect to practical examples of projects taking the Ecosystem Approach to management. As the dialogue proceeded, the process presented and discussed valuation as a set of contrasting approaches to decision making, using the distinction between 'monetary' and 'non-monetary' techniques to draw participants and specialists into discussion (See Figure 6.1). As such the dialogue was designed to expose participants not only to a broad area of critical debate but also to practical examples of valuation methods within which underlying assumptions and results could be examined.

5.2 'Valuing nature or valuing money?'[12]

When the idea of monetary valuation was explained to participants they expressed general unease with making an association between monetary value and nature. Money was not a word that many participants felt comfortable with when discussing the value of the natural world to people. This was because a very strong association was made between monetary valuation of nature and *'making money'* from nature. Monetary value was often associated with the activities of business and the market and of propagating the values of *'greed', 'profit'* and *'self-interest'*. These values were felt to contravene normative relationships to the natural world. Participants worried that a monetary perspective might be all about getting people to pay for things they should have a right to enjoy freely. They maintained that the value of nature is inherent, non-negotiable and tradable. Therefore any attempt to translate it into money is *'belittling'*. Nature *'is priceless, isn't it'?*

> ***'When the term 'value' came up, before, I wasn't thinking money at all, I was thinking what value it had to me personally. You know, if something is valuable it's often priceless, isn't it?***
>
> ***I didn't think of it in terms of money. I'm not sure how I feel about that. Would I pay to go onto Dartmoor just for the view? I suppose I would, but I'd feel it was a shame if it'd come to that'***
>
> ***'Yes'***

[12] This sentiment was specifically introduced by a specialist in the dialogue and was an important reference point for some discussions.

Valuing nature when making decisions

Monetary valuation approaches

- Estimates benefits of choices in monetary terms.
- Uses money as the common numerical unit for measuring and comparing how decisions impact on wellbeing
- Alongside market value, tries to place a monetary value on things that do not have a market price

Example techniques.....

Market prices Captures the value of goods and services that are traded e.g. the market value of forest products

Hedonic pricing Explores how the value of ecosystem services is reflected in property prices e.g. value of a pleasant view

Travel cost methods Uses the costs incurred by individuals taking a trip as an indicator of the recreational value of a site - e.g. travel costs, entry fees, opportunity cost of time.

Contingent valuation methods Respondents are asked what they 'willing to pay' for a particular environmental change e.g. paying more on bills.

Non-monetary valuation approaches

- Emphasises understanding of the way people think and feel about changes
- Uses both words and numbers for assessing how decisions impact on wellbeing.
- Techniques involve speaking with people about their values or interpreting documents and artefacts

Example techniques.....

Group discussions Participants discuss their beliefs and values in small groups.

Well-being assessment People surveyed for how ecosystem services may contribute to their 'self reported' feelings of well-being.

Desk based cultural studies An expert reviews a range of sources to gauge the cultural significance of change. e.g. poetry, archives, photos, newspapers

Participatory Mapping Group-based processes in which participants consider, or create, a physical or digital map to indicate features that are valuable and/or problematic.

Figure 5.1 General stimulus card* for valuation dialogue

*card created using images from the public domain or licensed under a Creative Commons Attribution 3.0 Unported License.

'It should be free'

'It's our right, isn't it?'

'Yes (x2)'.

Exeter, Event 1

'One thing that you can't knock in regards to the valuation of the environment is we've got to have it in order to actually live and breathe. So there's got to be something where you know a section of it is valued higher than anything else because without that everything else'"

London, Day 2

Participants thus generally asked why a policy and decision making process would be interested in using money as a measure of nature's value, when the natural world should be managed for the public, rather than private, good and when other measures might be used. Why, they asked, would this metric be chosen, if there wasn't some implicit financial and profit imperative in play? At the very least, participants highlighted the potential for monetary valuation to be misunderstood in these terms, even if the intentions were claimed to be different:

'It's confusing isn't it? Because we're dealing with a currency and we associate it with buying something and greed'

'I think the thing that sits uncomfortably with me is just the fact you think of money and inevitably you think of profit and what it's just trying to work out is somebody making profit out of it, I think that's what sits uncomfortably, it's like all of a sudden, somebody's got to be making money out of it in some way'

'I just worry about the way, the economics, and just about putting a value on it, whether or not it could turn into a way of somebody else making money'

'I was going to ask about the monetary valuation. In regards to that what, this sounds a bit weird, but what's the purpose of putting a monetary value on it? Is it so people just understand the value of one thing set against another or is it? [...]You wouldn't want it in a way that whereby somebody who has loads of money ... 'I'll buy that, I'll buy that'. Does it just in regards to people understand the value of it? Is that it?

London, Day 1

This persisted as an important background strand of dialogue, surfacing and resurfacing in discussion and providing the sense of an underpinning 'queasiness' and concern about where this direction of argument may lead. Participants suggested the true intentions and consequences of a monetary valuation perspective cannot be fully worked out in advance. The jury was still out, as one participant, reflected:

'If we were to go down that road of putting a monetary value on nature then what is it we value most, the money or nature? You know that would be something we would probably have to discover on route and it depends on the people who are involved I suppose. […]… some value nature more than money and some the other way round. So I think that would be a new road to go down, other things would come from that, you don't know until you go there. When you go there it's like that's when people's true feelings would come out, what they value most so I think that would be something to discover along the way'

London, Day 1

5.3 The tactical case for monetary valuation

Participants often tempered concerns about monetisation by making a 'tactical' case for the creation of monetary valuation evidence. They made a general play for engaging seriously with a monetary valuation perspective because it was consistent with the world and system people live in:

'You have to do it if you really want to convince people. People who make real decisions, who drive the economy, they drive our lives, that's the way that they respond, it's through financial means. It's necessary'

Exeter, Event 1

'It's a capitalistic world so that's got to be taken into account'

'The truth of the matter is money is the king'

'Money and monetary value, unfortunately that is the society we live in. So I don't think we can detract from that at all'

'This is capitalism; it's a capitalist system. So it's quite important. So without actually putting a monetary value on it… [the environment] would be discarded as worthless'

London, Day 1

They suggested within this that one of the chief gains of a monetary perspective on the environment was that it helped the environment to be seen as a sphere connected to everyday livelihoods and concerns, and built an argument in two distinct ways. First, at a general societal level participants argued that if government aspires to influence public interest in the environment it made sense to speak in terms of money, because people were driven by monetary concerns and monetary assessments of worth, (especially if this information implies some relationship to people's *'wallets'*). Monetary values may be specifically helpful in encouraging a national 'conversation' about the importance of the environment and raise political awareness (*'May help when informing the electorate'; 'a quick way of getting some messages across'*). A constituency of participants remarked in this vein that the dearth of national debate seemed to contrast with the local level, where the environment was often a salient concern stirring strong emotions, such as the impact of planning decisions. Monetary evidence may thus be a way of informing and influencing values for environment at this national level. An illustrative comment in this respect was:

> ***'I think it's almost an essential thing to do in order to make it real because otherwise I think it's one of those things that it's very easy for us to wait for this to become a big enough issue to get people out on the street or to get upset in a local way, and that's great locally, but we have to look bigger than locally. We have to look at the bigger picture. So I think at the moment if there's real passion for a local issue then that's great, that gets them all fired up but I don't think the environment is a big enough issue to get everybody fired up nationally, which is what it should. So I think it's a logical step personally to start to put a [monetary] value on it, to start to think about how much benefit you get out of it'***
>
> London, Day 1

Second, many participants argued that evaluating environmental choices in monetary terms was important because this aligned the environment to prevailing concerns. Monetary valuation is the language of economics, and as one put it, *'economics plays the key role in any policy decisions made by the government'*. By taking this approach the environment could be factored in to governmental priority setting and evaluated like any other area of service provision. Monetisation is a way that budgets could be unlocked and justified. (*'A blank cheque would be lovely, but the Exchequer might disagree'*). Without this approach, they argued, environment risked being a side-line and a marginal issue; an optional alternative rather than something mainstream and non-negotiable.

> ***'Could (monetary valuation) help … up government? I mean economics is more closely related than***

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a bunch of hippies campaigning about the environment. That might be the terminology in the political sphere that they understand to value the cultural and spiritual aspect of the environment. If that's what they need to understand it, perhaps it will have some impact'

'[The monetary approach] is trying to speak to [top, top government]…It's a way to speak to them isn't it? It's trying'

London, Day 1

5.4 The need for evidence you can 'put your finger on'

In general, monetary valuation was considered an important basis for policy and decision making because it provided evidence that seemed usable. The chief virtue of monetary valuation was that it provided evidence in a quantitative format, with assumptions and procedures that appeared transparent because it *'breaks everything down'*. For participants, quantification implied measurement, and this was important: *'if you can't measure it, it's not really as appealing to governments'*. By dint of its quantified nature, monetary valuation evidence allowed issues and policies to be assessed and compared in a systematic way as well as opening the evidence base to scrutiny. This was evidence *'based on specifics'*, and information that you could *'put your finger on'*:

'The economic viewpoint is very useful if you're going to want to create a policy because policy needs to be measurable, you need to be able to – for you to get governments to change their minds and to change the way things are done you need to show them that this has a measurable success …[ ]… If you just went with the intangible then it would be more difficult to push that through as policy, if that makes sense, because it's not measurable'

London, Day 1

One of the related associations participants made with monetary valuation evidence was that it provided *'objective'*, *'factual'* and *'unbiased'* information; information set apart from *'feelings'* and *'passion'*. However there was a rhetorical dimension to these views and it is important also to recognise two key concerns.

First, participants expressed concern that numbers in general are open to manipulation. They displayed scepticism about what numbers allow interested parties in decision making to focus on and claim in order to meet their pre-conceived goals. Quantitative evidence was perceived to be easily manipulated and twisted to suit various purposes, [*'All those different figures, you can sort of swing those'*] and not necessarily in favour of the environment. This point was sometimes developed specifically in the context of monetary valuation. There was something specific to money as a numerical unit that encouraged the view that numbers may result in a poor deal for nature (again the example of land speculation was a common reference point for discussion).

Second, participants persistently challenged the underpinning assumptions and results of monetary valuation approaches. In this dialogue we exposed participants to some practical examples of monetary valuation. We specifically considered the application of travel cost and hedonic pricing methods to evaluate improvements to amenity spaces and water courses in a hypothetical landscape. Participants were presented with the rationale for using these methods, the procedures employed to gather data and determine values, and some example results. They were then probed on their impressions of these rationales, methods and results and how they might be said to provide a basis for 'good' decision making. While many appreciated the analytical precision, and apparent transparency, of monetary methods, these methods invited many *'what if?'* and *'what about?'* questions among participants. Monetary valuation was thought for some to provide a *'clever'* approach to the analysis of decision issues, but this kind of evidence was widely considered insufficient. Participants were generally alarmed by the prospect of investing too much faith in monetary methods alone because they appeared to work with a generally limited set of assumptions to produce results. In this monetary valuation was seen as providing one kind of reference point for decision making – *'an indicator'*- but *'won't do the whole thing on its own'*. As one put it, monetary valuation is *'one tool, an important tool, but not the only tool'*.

5.5 Moving beyond money and numbers

As these methods were exposed to scrutiny participants' discussion gravitated towards the need for a more a qualitative, interpretive and participatory assessment of value. There were two key dimensions to this.

The first related to the perception that, alongside material product from nature that sustain people, many of the things that people value about nature are ambient, long term and cultural, and capturing and exploring these values does not

sit well with monetisation and the prescriptiveness of a quantitative approach. Participants offered dimensions of personal and social experience – such as pleasure, worship and wonder in nature – as illustrations that numbers and money provide a very blunt measure of value. They talked too about the difficulty of measuring value in terms of in-perpetuity benefits that arise from looking after the natural world: how do we capture a long term sense of gain and bequest and how do we value the broader *'feel good'* effect of sustaining our natural world?:

> ***'[The] feel good [factor], isn't it? It's that thing you can't quantify'***
>
> ***'The feel good factor!'***
>
> ***'Can't put a value on it'***
>
> ***'Can't put a value on it, no'***

London, Day 2

The second related to the idea that quantitative and monetary methods would be inadequate as decision issues become more controversial and proximate. There were a recurring set of issues that participants drew upon to make this point: particularly building new homes and transport infrastructures – roads and airports – and the siting of landfills or incinerators. All of these were offered as examples where valuation would fall short if guided by quantitative and monetary logics alone. This logic bears a resemblance to the NEA's idea of a balance sheet approach, where the depth and approach to evidence gathering is broadened out from economic (monetary) instruments towards more deliberative multi-criteria approaches as the complexity and 'stakes' rise. At least in part, some of the hesitancy with these monetary methods arose from the way they were taken to imply that decision processes may be hurried along to fit pre-ordained positions. The concern was that monetary methods may be used to bypass deeper engagement in which underpinning controversies about decisions lingered.

In making these points, participants envisaged a basis for valuation that harnessed the thoughts, views and aspirations of local communities. There was a need to *'value opinions at the lower end of the market, people like us';* and have *'local people decide things'*. Participant generally equated non-monetary valuation and involvement in decision making as the same thing. Locals are people that a decision *'means something to'*. This was partly about making *'better decisions'* by incorporating *'good local knowledge to understand the issues and different perspectives'*, but also about rights and responsibilities to be actively involved in decisions that impact directly on people's lives. Participants reflected on the NEA's language in terms of promoting *'community or shared benefits'* and suggested participatory processes sounded the most *'promising'* route: *'It's people communicating and working together. That's where it starts you know'*. Or again:

> ***'Maybe the ecosystem services framework can help look at – like us… try to identify issues but those issues are not always going to look the same and I think we should be ready to understand that and perhaps that means that you need lots of local knowledge and local expertise. Hum […] maybe it means more representation like more power to the people, I don't know. Greater democracy'***

Exeter, Event 1

In the dialogue participants were presented with a range of techniques under the rubric of non-monetary valuation that allowed this logic to be tested and given expression, including consideration of discussion groups, textual analysis and participatory mapping. These were discussed in the same hypothetical decision contexts as the monetary approach. Participatory mapping was remarked upon very favourably as it was perceived to allow people to reveal values in a spatial rather than monetary format. But it was the use of talk-based techniques that were discussed in the main. The general point was that people viewed discussion-based formats as a particularly important basis for decision making. They were a way of revealing the complexity of people's values and views about locally sensitive decision issues and options for management. More generally they were considered a way to *'capture people's imagination'* and engage people in their *'hearts'*, rather than by simply analysing cold facts.

Yet participants also highlighted three areas of weakness in this way of approaching valuation. First, they were often concerned that discussion processes may not resolve the complexity of issues they naturally encourage. These approaches were 'discussion' based rather than 'decision' based, one argued. They were generative of debate, but lack definitiveness (*'There's no closure or anything. It's kind of up in the air isn't it?'*). Participants were not confident these methods could come to a conclusion and worried that they risked being side-tracked by insignificant and irrelevant issues: issues that get blown up out of proportion. The reassertion of monetary techniques was a feature of these discussions.

'You see I think it comes back again to what we were saying when we were saying that the monetary – although we've shot loads of holes in it just before – the monetary one is more useful because if I now think of being given these two answers and I have to go and present something to government, if I go and say if we go and improve that estuary it could potentially have higher recreational value for those living there and there's promise of educational potential, it's not the same thing as saying it's going to increase the value by about £51 million. It might be a random figure but it will get more action if you have figures than if you just say there is potential'

London, Day 1

Second, in evaluating this approach, it was common for participants to invert the perceived strengths of a monetary perspective and suggest that participatory approaches would be informed by *'subjectivity', 'emotions'* and *'misty'* arguments. While monetary approaches are subjective, non-monetary approaches like these were considered by one as *'very subjective'*. They would be running on *'speculation'*:

'It strikes me that a lot of the non-monetary stuff is very subjective. It's stuff that really depends on the people you speak to and whereas a lot of the [monetary] stuff again, is specific, it's accurate, it's measurable. If I was to just choose, personally, if I was looking at this and just to choose a way of how to value the environment based on what I'm looking at on the paper now I would go for [monetary] because you can see exactly the thought process and how things are linking together whereas with this – for example bring people together to discuss their beliefs and their values – people are then asked how the ecosystem services may contribute to their own self-reported feelings. So I could come here and saying actually having a park round my house makes me feel really good and it makes me feel – but in honesty I haven't been to the park near my house for the last five, six, seven months. I walk past it but – so this is a lot more accurate to me than this. This lends itself to being manipulated by people. We all like to sound you know… pure and perfect every now and again and sometimes I think it is useful to have something that's direct and accurate, that's measurable like that'

'I've got a slightly different slant on that. I agree, I think the [monetary approach] is subjective but I'm very much aware, my mindset's much more black and white. I'm concerned about how subjective the value of this estimation is. I don't know how you can estimate some of these things; put an estimated value on them. I like the idea of doing that but I'm not sure how you could. I think you're right though, the [non-monetary] side is … very subjective'

London, Day 1

Third, participants spoke persistently about representativeness (*'The minority speaking for the majority I think'*), and questioned whether these approaches would involve a *'handful'* of people with vested interests; people with an agenda who would not see the *'bigger picture'*. Participation need to be approached systematically, drawing in a cross-section of people. The capacity of processes to be dominated by one or two individuals and create a *'pack mentality'* was also cited as a potential risk:

'What kind of sticks in the throat a little bit, just with the group discussions are brilliant when they're done and not wishing to blow smoke up our own backsides but when it's done it this way, when it's people from all over the place and we don't know each other from Adam and none of us have got an agenda, I think small groups discussing beliefs and values in small groups does open it up to sort of non-elected local interests groups for what's important to them rather than with the bigger picture […]so I think the group discussions to get people's beliefs has to be done very well to reflect a very different demographic'

'I've been at public meetings before where we do have the pack mentality and it's all very promising and I think about 50 volunteers from mixed social backgrounds and it's democracy, that's ideal as long as it's all fair but I mean it needs to be factored in that actually whenever you get a group of people together there might be somebody who is maybe a little more dominant and leads other people to follow them because it's almost where it's very easy for a few concerned, determined individuals to lead the pack to their support'

'With vested interests too … galvanise their support'

London, Day 1

5.6 Conclusion: linking the monetary and non-monetary

The picture emerging in this dialogue is of monetary and non-monetary approaches to valuation effectively showing up each other's strengths and weaknesses. What monetary approaches add to decision making in terms of analytical clarity and precision, they weaken in terms of obscuring the complexity and diversity of values and views at the local level. At the same time, approaches to valuation that emphasise the use of qualitative, interpretive and talk-based techniques risk inviting subjectivity and introducing complexity they may struggle to resolve alone. Not surprisingly, there was a strong and accumulating thread to the dialogue that 'good' decision making emerges from the coupling together and blending of non-monetary and monetary approaches:

> ***'They're very much inter-dependent, you can't really have one without the other'***

> ***'How do you bring the two together? [the monetary] seems to be more factual and objective and the [Non-monetary] is a lot more to do with ethics and how I feel you know, and they're two different kinds of things and it's just how do you make them work with each other and create something which is better?'***

> ***'I think it's going to have to be, I think there's going to have to be a way of working out the monetary value of something and trying to incorporate that but that isn't the be all and end all, there's got to be something else and it's not to say that the monetary value is necessarily more important than the other way that you're doing it but I think that it has to be like worked through together'***

> ***'Money can provide a basis but it can't be the only factor so it can provide the groundwork, you can put your foot in it. It can actually give you the brass tacks of something tangible there and then so then the other sort of elements can be added in but as long as it's not the sole focus I think and the only means of providing that decision, it can be the basis as in those stats but that's not the be all and end all and I think it's got to start somewhere and I think it's going to be really difficult to try and find a model but I'm sure, like you say, there are various models that are available when done properly can provide a good figure. I think what we need to do is make sure that that's there and that's part of the decision making process and there's an element of appreciating the sort of a localism issue and the little bits and pieces that come into it that we can't put a monetary value on.'***

'They're tied in together […]They're not separate; you've just got a different viewpoint that's it…of the same thing probably'.

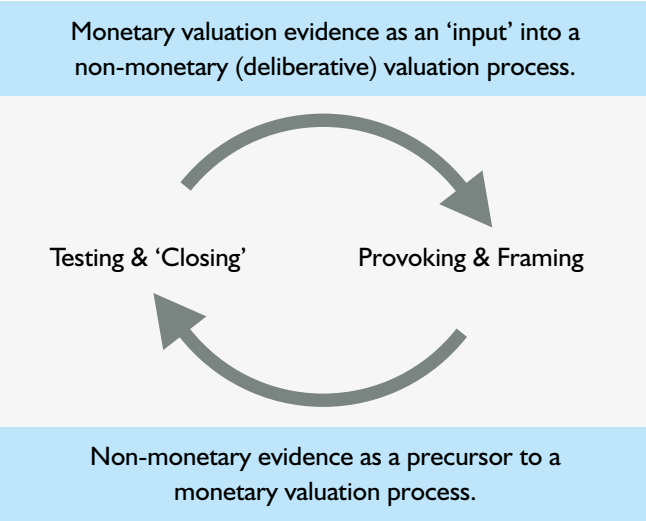
'Can't you say use both? I'd probably be halfway but I'd say reformed monetary. Incorporating the non-monetary ...[ ]… It just seems more – if you're goal is to make decisions then you need an approach that can be understood and taken on board by the decision and policy makers. And I think, although it is flawed in the way it was presented at first, the monetary is easier to justify and push through. So ultimately the end goal is the same in the sense that you're trying to decide on doing good things for the environment but you need the approach that gets the most done, if that makes sense. So I think monetary, although it needs to be a combined effort, like you said, of those two options'.

London, Day 1

Importantly participants in the dialogue tended to approach the idea of pluralistic valuation in two ways. First, they saw monetary valuation evidence as an input into a non-monetary (deliberative) valuation process. In this case monetary valuation serves as a provocation and framing device that can be opened up to scrutiny and debate through wide deliberative processes. Second, they viewed non-monetary evidence as a precursor to a monetary valuation process. In this case non-monetary valuation was a way of opening up the parameters of people's priorities which are then tested against and exposed to monetary reasoning. We term this the 'Jacqueline model of pluralistic valuation', reflecting its origin in a discussion led by a dialogue participant (Figure 5.1)

What holds these two approaches together is the idea of valuation approaches working in a sequence. Monetary and non-monetary approaches produce evidence that can be handed over to inform another dimension of valuation. In these two lines of reasoning dialogue veered between viewing monetary valuation as the 'dog' that wags the 'tail' of non-monetary valuation and vice versa. The sense, however, that pluralistic valuation is a way of building an accumulating and iterative valuation narrative was discernible.

Figure 5.2 The '*Jacqueline*' model of pluralistic valuation



CHAPTER 6. DELIVERING AND PAYING FOR ECOSYSTEM SERVICES

Summary

- The principles and practice of payments for ecosystem services schemes were evaluated as a way of managing and delivering ecosystem services at the local level.
- In general, participants responded well to the idea of the 'beneficiary paying'. They liked the focus on rewarding and encouraging positive behaviour, although participants frequently returned to the idea of the 'polluter pays' in order to emphasise that poor environmental practices should be penalised.
- Many participants spoke of ecosystem services delivery in terms of obligations and commitments and worried that the Payment for ecosystem services (PES) agenda sounds too voluntaristic and market orientated in outlook. Some also suggested that the language of 'payment' does not capture the need for a wider and long term commitment to environmental ends and for some there is a need to ensure that government has active and enabling role in PES.
- In terms of who pays for ecosystem services at the local level, participants identified roles for the state, local business, residents and visitors. There was some concern that local consumers may end up footing the bill for activities that are the responsibility of business and its shareholders.
- In terms of the co-ordination and implementation of local PES schemes participants overwhelmingly associated desirable scheme design and implementation with the involvement of third sector organisations with locally specific environmental remits (in the absence of government). These types of organisations were perceived to have the 'right' outlook, ideas and values. Schemes co-ordinated by entities with commercial interests were viewed with suspicion.
- Participants were generally concerned that money might actually be lost within complex intermediary processes. The need to ensure that the administration of schemes is not resource intensive was considered important or people might be charged more for the same ecosystem services, or less might be provided for the same price.
- An important condition placed on payment for ecosystem service schemes by participants was the need for clarity about what the money goes towards. Some expressed concern that PES schemes seem directed towards activities that seem hard to monitor in practice.

6.1 Introduction

One of the wider contexts in which NEA thinking has been embedded into policy and practice is by recognising the potential of market-based mechanisms for ecosystem delivery, specifically the creation of the Payments for Ecosystem Services (PES) schemes. These are one of the potential mechanisms through which responses to ecosystem change may be cultivated, and within the NEA a number of PES schemes are cited as good practice.

In the dialogue participants were introduced to the idea of PES as part of a wider discussion of the relative roles of the market, state and civil society in managing our changing ecosystems. They were introduced generally to PES in Stage 1 of the process, with some participants in Exeter specifically considering a real world example of PES where payments are being issued to farmers by a water utility in exchange for them taking measures to help improve and maintaining water quality. In Stage 2 of the process participants discussed the principles and practice of PES in further detail by considering a hypothetical set of PES schemes within a fictitious city-region. An example case study is provided below (Figure 6.1). In summary these were:

- A coastal improvement scheme in which tourists and local day trippers contribute to landscape and water quality improvements by way of voluntary donations to farmers;
- A local green space scheme in which an area of urban land is converted in to a nature reserve to deliver water, wildlife and recreational benefits through a local development offset. This is paid for by residents through an annual levy;
- A woodland scheme in which new areas of woodland are planted for carbon, recreation and habitat benefits and paid for through markets for carbon offsets.

In this chapter we consider the main dimensions of how groups thought about the PES agenda. This spans general reactions to the underlying principles and focus of PES,

but also more specific issues concerning how payments for ecosystem services might be made and by whom, how PES schemes might be co-ordinated and implemented at the local level, as well as participant views on the way scheme inputs and outcomes might be monitored.

6.2 General reactions to the idea of payments for ecosystem services

According to a best practice guide commissioned by government the "novelty of PES arises from its focus on the 'beneficiary pays principle', as opposed to the 'polluter pays principle" (Defra, 2013: 13)[13]. In the dialogue the subtleties of these two ideas was an important thread of discussion. In general, participants responded positively to the idea of the beneficiary paying, for it signified to them that land managers were being encouraged; that good behaviour was being rewarded. For example an analogy was drawn between the idea of PES and the culture of rewarding consumers for their actions (e.g. loyalty points at supermarkets). Participants suggested that monetary incentives by way of payment for ecosystem services were an important part of behaviour change, even if there is an element of cynicism about the way land managers were able to present themselves:

> ***'I'm a bit fed up with farmers who have this power and seem to be able to put a monetary value on everything they do. But [the idea of payment] is a more positive example than fining wrong doers'***
>
> Exeter, Written Feedback, Event 3

It is important, however, to signal how frequently participants returned to the idea that poor environmental practices should be penalised. Although a related principle of PES is that "payments are made for actions over-and-above those which land or resource managers would generally be expected to undertake" (Defra, 2013: 15)[14] this was a grey area for participants. At one level, discussion often slid into a concern about PES being all about paying land managers to right wrongs: *'The whole thing about compensating farmers for doing something that they're not supposed to be doing, I mean that doesn't sound right'*. Some participants used the idea of PES as the backdrop to speak explicitly in terms of penalties and fees for damaging the environment and ecosystem services, so that *'people who create the most [problems]'* and *'those who do the most damage'* should *'pay the most'*.

At a broader level, discussion was often animated by concern that the thrust of PES was very voluntaristic and market orientated in outlook; that the mechanism seemed to be based on *'good will arguments'* and that a sustainable environment was perhaps being placed in the hands of private interests. Participants persistently tempered these perceived developments with calls for regulation, quality assurance and accreditation and the development of policy to bolster commitments and obligations. There was a need to *'put a bit more grit into it'* and *'give it all the guns'*. The PES approach seemed *'a bit too consensual', 'too gentle';* and *'should we shouldn't we?'*, even an exercise in *'pussy footing'*. Instead there was a need to *'go and dictate'*. Some challenged the language of PES, suggesting the term is misleading of the larger commitments required. For example one group argued in plenary feedback: *'Why not put a line through 'payments' and just put 'investments'? What about investment in ecosystem services?'* and further that payment sounded like a *'price tag'* view of nature and did not quite capture the holistic perspective of the Ecosystem Approach. Those who benefit from nature should be investing back into nature. Similarly in group discussion payment was by some taken to mean getting an *'immediate return'*, like buying a product, when according to them the approach should be more about *'building', 'nurturing'* and *'enhancing'* nature.

Finally, when presented with a range of examples, it was noticeable that some participants felt the scope of the agenda was very much orientated around *'easy targets'*. There was a feeling that this is a rural agenda closely related to benefiting farmers financially. Some participants speculated whether government could *'turn the carrot around'* and find ways of thinking about wider publics being rewarded for providing benefits, such looking after urban green space and gardens.

6.3 Paying for ecosystem services at the local level

6.3.1 The contribution of the state

Participant discussions of the PES schemes were often coloured by the idea that money for environmental initiatives is short. They sometime married a discussion of PES to the wider issue of austerity and the need for government to be *'clever'* and *'smart'* in how funds for the environment are procured.

[13] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/200920/pb13932-pes-bestpractice-20130522.pdf
[14] Defra (2013) Op Cit. 12

'They can do this and they can do that and they can be involved in this and they can be involved in lots of different things… but financially wise there's going to be less money to do it so that was what ultimately kind of stuck in the back of my head when he was saying it because he ran through various ways the government can introduce these spheres of you know they can encourage people, they can disincentivise, they can incentivise, they can do this and they can do that but really the long and the short, at the end the message was we're going to have to do more with less … I would say and that's the way that it's going and we've got to be clever about how we try and fund this cos it isn't going to come from the government as such, we'll all end up paying for it in some way anyway'

London, Day 2

It is notable within these discussions, where the focus was on exploring PES in terms of locally led initiatives, that participants retained a concern that national government should make a direct contribution to these activities. There are several dimensions to this aspect of the dialogue. The first was the idea that the state was perceived to play an important symbolic role in encouraging and validating action: a small financial contribution would apparently go a long way in conveying a sense that government is aware of and committed to these activities. What runs alongside this is the perception that public funds might be given to local authorities but they might not necessarily direct this money to initiatives such as a local PES scheme:

'What they need to do is give a certain amount of money with a part of it ring capped so that it's only used for that purpose. Unfortunately as it stands at the moment they give pots of money to the local authorities and nothing's ring capped and the local authorities think oh we don't need to put it into education we can put it into something different so unless it's ring capped then … that's one area which it could be; it doesn't have to be a fantastic amount, but showing that they are concerned'

London, Day 2

More generally, what arose from discussion was the perception that there was public money available– specifically grants for projects – that local stakeholders might draw on to facilitate PES initiatives. Speaking in the context of a hypothetical PES example where the focus was on voluntary (visitor) contributions one remarked:

'What about actual funding ...from the government, to me this is all based on donations and charities. You know, is there no place to actually get EU funding or government funding. There must be a pot of money somewhere?'

London, Day 2

Participants used these PES examples to talk about government playing an enabling as well as a funding role in the development of local payment schemes. For example, one group remarked on the way the state might help educate and train local stakeholders in skills that might allow them to unlock wider funding.

6.3.2 The contribution of local business

A small number of participants argued that since local businesses gain financially from a high quality natural environment they should be expected to contribute towards PES schemes. They suggested it is important to view payment for ecosystem services in the context of the environment's capacity to promote general economic activity and opportunity in an area. The environment enables opportunities for local tourism and recreation and these not only spawn environment-related businesses, but encourage people to spend money in a local economy. A high quality environment also enables businesses to sell products that trade explicitly on local environmental credentials, such as foods of local provenance, as well as people who *'run a kiosk'* or *'flog ice-creams'*.

As such some participants believed there is a case for local businesses to invest back into the environment that supports them. This may include contributions from businesses that directly gain – such as hotel owners and leisure businesses – but they were also attracted by the idea of general payments being made by local businesses, as suggested by a specialist in one group discussion: *'claw[ing] back money from the increased wealth within the town through business rates and local income tax or something like that'*

6.3.3 The contribution of local residents and visitors

Many participants suggested there is a case for residents and visitors to contribute to schemes that support the provision of local amenity benefits. Participants argued that the provision of a high quality local environment bestows upon people a range of amenity benefits and there were virtues in both voluntary and mandated forms of payment.

Figure 6.1 Stimulus card: Example of Payment for Ecosystem Services scheme

The Hopeshire Coastal Improvement Project

Project Aim

To reconnect people and nature along the Hopeshire Coastline by:

- Protecting and restoring coastal footpaths to enhance recreational access;
- Protecting and maintaining the habitat along the coastal margin;
- Creating a wetland to help intercept pollutant run off,protect marine wildlife and improve bathing water quality.

Project Context

The area targeted encompasses 10 miles of local coastline which is currently owned by the *Hopeanfray Crown Estate*. Agricultural land that borders the coastline is rented to farmers for grazing livestock.

A local environmental charity - the *Hopeuseeit Wildlife Trust* - is active in promoting habitat management in the area.

The area is a big draw for local people wishing to make use of the area for recreation and many visitors come there to catch amazing views of the Cape of Hope – a large rocky outcrop, half a mile out to sea. The potential of the coastline for water-based recreation is limited because the water is well known as a 'hot spot' of pollution arising from agriculture.

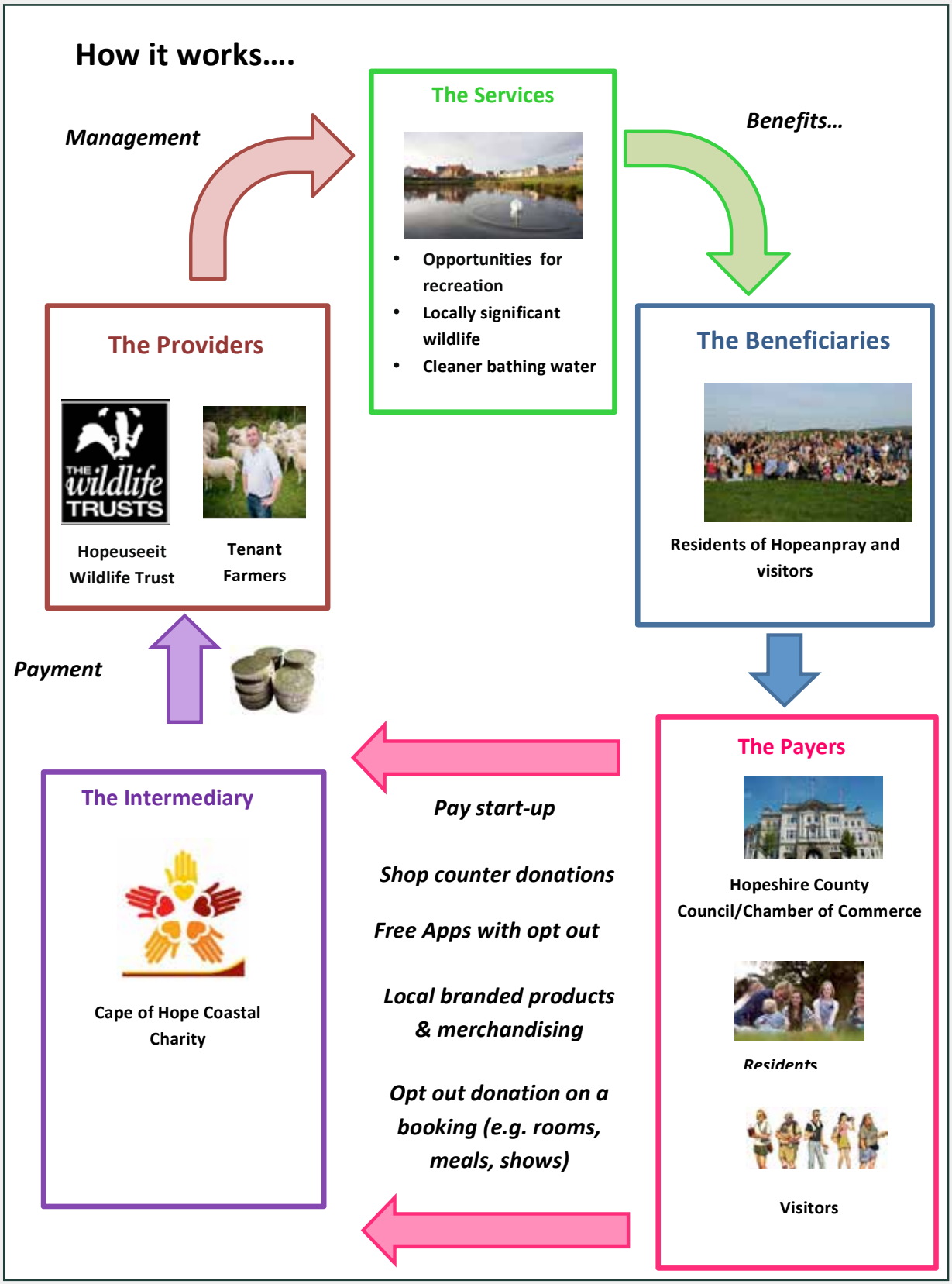
The proposal on the table

The local council and chamber of commerce are proposing that a charitable organisation is set up to run a Visitor Payment Scheme – the "*Cape of Hope Gifting Scheme*" that allows to tourists and local day trippers to contribute to landscape improvements by making voluntary donations.

The plan is to enlist local businesses into the scheme: accommodation providers, retailers, and tourist attractions. Businesses would be free to join the scheme and would be responsible for collecting money from their customers through accommodation and restaurant booking systems, shop counter donations and '*Cape of Hope'* products and merchandise. They also plan to develop a Cape of Hope 'App' that visitors can use to learn about the area and which allows users to donate electronically to the particular projects.

The *Cape of Hope Charity* would be initially set up with help from a local authority grant as well as contributions from the local Chamber of Commerce. The charity would act as an intermediary for the coastal work, collecting the money from local businesses and distribute this back to the *Hopeuseeit Wildlife Trust* and the *Hopeanpray Crown Estate* for carrying out the improvements, in conjunction with farmers.

Figure 6.1 Stimulus card*: Example of Payment for Ecosystem Services scheme



*card created using images from the public domain or licensed under a Creative Commons Attribution 3.0 Unported License .

Resident levies and fees

As part of the dialogue, participants considered the idea of local homeowners and tenants paying into a scheme that invested in improvements to nearby nature. In this context some participants offered the view that payments may serve to create a positive sense of ownership of local and surrounding nature:

> ***'You've got this scheme set up you've got that sort of invested in the people involved?'***
>
> ***'Yes the people have bought into it, the people are there and it's theirs and it belongs to them'***
>
> ***'A levy gives them some ownership and interest and a connection … and to see where their money is going'***
>
> ***'The only way that I think that it can work is to make people responsible, is if they owned something. If you see a house that people own it's generally looked after and it's their house people rent it's generally neglected. And if you have the two thousand people that are paying good money to look after this site they will be looked after if they don't pay in the future'***
>
> London, Day 2

Some noted concern that any such arrangements would have to come with certain guarantees. They were concerned that residents would be locked into payments and fees might rise. They also questioned how far these payments were enforceable legally:

> ***'This is about knowing the terms and conditions. There is not very much security for people like the home owners with the levy payments. We were discussing earlier what happens if [the fee] doesn't cover [the management] and right "we need more money from you and we are going to have to charge you an extra 50 pounds per month." There is not really enough security. There is not a law saying you can't do this but obviously in this situation'***
>
> London, Day 2

A constituency of participants also raised the question of 'free riding' in this context: the idea that some people are paying for the benefits of others. There was no settled view on this issue. Some expressed concern that a small number of people would be paying into a scheme that many people would benefit from. Others pointed out that it would be relatively wealthy people that would be paying the levy and this would allow less fortunate people to gain too.

'If they were levied on the property owners it isn't necessarily going to go down very well with the property owners because there are going to be loads of people visiting this new facility who aren't paying. They will charge them to use this new facility'

London, Day 2

'Get the 300 [fee], the 300 I think if [residents] choose to live in a beautiful new development in a beautiful area they can pay for the underprivileged. And it gives them some ownership, yeah'

London, Day 2

Visitor payback

Participants considered the idea of 'pay back' by visitors who make use of local environments. Again participants were generally supportive of the idea of visitors making donations to fund local environment improvements. Voluntary donations seemed a *'reasonable ask'* as one put it: *'I think if you're there and you've experienced a nice clean area and the beach and all that, I think it would be a pleasure to donate a certain amount of money'*. The dialogue considered a range of different models: contribution to collection boxes at sites and on shop counters, web-based apps that invite people to make contributions as they move around a landscape (*'Walking around somewhere "yeah I'll make a donation to sit here"'*); the issuing of car parking fees; opt-out payments on hotels and restaurant bills; subscriptions-based donations from local nature conservation/wildlife organisations. In one more elaborate scheme, a group of participants invented the idea of a crowd funding scheme in which funders were rewarded with discounts and savings upon visiting, so that:

'If you have something where you have maybe people donate money. People donate money willingly in exchange for something back in the end. So you could say "we are trying to raise […] a million pounds. So if you donate this much you will be entitled to maybe this much, so you will be entitled to a year's worth of unlimited visits or you would be entitled to bits and pieces we could then get or working" . If they're going to work with the hotels you would be entitled to discount accommodation for the next two years whenever you come and visit and things like that. So people who are interested in that place are pushed to donate. But they also get something back and they can still measure the effect because they can see the improvement. Once people visit you could say if you donate this much next time you come you will get this much off your hotel bill'

London, Day 2

The idea of visitor payback did not invite serious controversy in the dialogue though it is notable that participants raise in this context the fragility of revenue streams:

'You can't plan for donations. So whilst it's a good plan in essence, there is no real way of ensuring that you get the amount of money you need to do what you're trying to do because you're relying on donations. Those donations would vary wildly depending on things like seasons. For example, if it's a certain type of season people won't come and visit. But...won't get as many donations and that sort of thing. So it's difficult to plan long term if you don't actually know how much money you have to work with in terms of what's going to be coming in from donations'

London, Day 2

'I was going to say I would much rather they have people actually paying to get into the place as opposed to making it a donation. So if people are coming here for this, to go the coastal footpaths and that sort of thing, things like charging people for parking zones. Things like charging people for entering certain parts. Maybe that might be for special things and that sort of thing. Just something that is actually fixed. So you can say if we get 10,000 people come in then we expect to see at least this amount of money. So that then at least firstly guarantees you some sort of return'

London, Day 2

In general, people placed a premium on stable funding over the long term and were concerned about an overreliance on voluntary payments. There was a need for a *'back-up plan'*; a *'safety net'* to complement and support these voluntary activities.

6.3.4 Burdens of payment

A small number of participants were concerned that local consumers may end up footing the bill for activities that were the responsibility of business. For example, organisations that pay land managers to assist in the

provision of ecosystem services, such as providing clean drinking water for consumers, were perceived as doing so because this represented a saving over Alternatives Course of action, such as investing in expensive downstream treatments of water (this was a live case study also considered in Exeter, Event 2). In this case participants liked very much the scheme's idea of low cost, low tech, ecological solutions, but they questioned why payments for producing these efficiencies should be passed onto consumers and bill payers. It is notable in this context that PES is sometimes translated into a discussion of underpinning shareholder value. Some participants hold the view that wealthy individuals, particularly distant (non-UK) shareholders are benefiting from increased profit margins by way of PES activities and that consumers are footing the bill.

> ***'At the end of the day, when you hear, say, your bills are going up and then the gas company have made millions and millions of profit, you think to yourself, 'Hang on a minute, there's something disproportionate there. It should be a little bit lower if we have to pay more. Surely that's just being greedy'***
>
> Exeter, Event 2

> ***'The thing that gets me about that it's a scheme that is obviously beneficial. [The water utility's] a private company, I think, it's predominantly owned by [non UK] shareholders so all of a sudden it's like that you've got local people paying for their local water company to make their services easier. If that profit is going back in brilliant but it ain't. There's a profit side of it which sticks in the throat which is the world of the market and I suppose […]actually it's your landowners, it's your big companies, they're making money out of it and whilst these schemes are much better … than not having them …[ ]…some rich people are still making more money out of it and […] actually this could all become, it will have little sort of benefits but ultimately are the rich going to get richer and are we going to end up with a better environment and I think that's the crossover here and that's, I'm giving my politics away really but I don't agree with private companies doing and having certainly in charge of water supplies and things like that and making the profit'***
>
> London, Day 2

The idea that consumers would pay a higher utility bill for a land management PES scheme was galling for some, since clean water is what these utilities should be delivering anyway and the activities are a business saving. What we see here is participants mapping general concern for a privatised model of water provision onto a reading of PES schemes in particular.

Importantly, though, participants felt the overall approach to the problem was good and individual burdens of payment were likely to be modest and acceptable in practice. Indeed, participants tended to be highly price-sensitive and moderated their views accordingly, although there was concern about payment being made by a squeezed middle:

> ***'I'm sure you do printed material, you know, you've got a website, but the vast majority of people just see their bill and they complain that it's too high. I'd go away from this thinking, 'Well, you know what, I wouldn't mind paying another 5p here or 5p there, if this is what it's going to lead to'***
>
> Exeter, Event 3

> ***'But it depends really when you are talking...it depends on what percentage you are paying and how much you are paying. Just a small amount that everyone is paying then [it's okay].***

> ***'I suppose one of the problems with this though again when you broaden it right out it's always the same people that are paying. So you've got people at the top of the scale who are very wealthy and tend not to pay. You've got people at the, a lot of people at the bottom of the scale who are on the benefits system (sic) so it's always the middle section that pay. So you know it's just doesn't quite sit with me. Not that it isn't a good idea but it's just because there is only a finite pot isn't there? Which is I suppose why I think the bigger companies, the wealthy landowners should be charged maybe'***
>
> London, Day 2

An interesting sub-dimension to this line of reasoning was a distinction made between land owners and tenants. A constituency of participants viewed land owners as organisations and individuals taking money from tenant farmers and therefore encouraging poor practices. For some, it was landowners who seemed to be inadvertently rewarded by PES schemes and it was land owners who should *'cough up'*, or otherwise *'reduce rents'*. Reflecting

on a hypothetical example of a visitor payback scheme investing monies in improving water quality one participant reflected:

> ***'It's saying "ok so go ahead and make money by polluting. We will charge members of the public who will come in and we will get donations and we will give back money so you can then fix what you've caused". They don't seem to have any [responsibility]'***
>
> London, Day 2

And another:

> ***'They are making money from this place. But they own the land. They're making money from it. But what they are doing to make money from it is polluting and causing problems for the public resource which is the coastline and that sort of thing. So surely they should pay for that out of the profits they're making from leasing out the land'***
>
> London, Day 2

These kinds of concerns were also extended more generally into the question of land development and the issue of mitigating and off-setting the building of homes for residential purposes. Participants noted that when homes are built in places endowed with high environmental amenity, prospective home buyers and tenants are likely to pay more, and this will result in financial gain for those who sell and rent these new developments. But some participants wondered whether this *'selling off'* the environment and its impacts would be fully reflected back into a contribution towards the environment.

6.4 Co-ordination and implementation

Participants overwhelmingly associated desirable scheme design and implementation with the involvement of third sector organisations (variously expressed as *'voluntary', 'charitable', 'community based' and 'social enterprise'* organisations). Participants placed a premium on ensuring that schemes are managed by organisations and individuals who are committed to the environmental goals of the PES scheme and the general reasoning was that these types of organisations have the 'right' outlook, ideas and values, not least because they have to state their public good objectives explicitly (*'Charities aren't for profit really so I mean if you work for charity you're going to care about the issues'*). In contrast, the idea of schemes being co-ordinated by entities motivated by financial gain (*'not just a profiting company profiteering'*) was viewed with great suspicion. Speaking of the example where a management company was responsible for collecting an environmental levy to finance a PES scheme one stated:

> ***'You need somebody who is impartial to look at all this money […] And that's why I think charities, I don't know who else is impartial. Someone who doesn't get paid by the people, who can't get profit from the situation no matter what the results are. Someone needs to be able to comment on it... regulate it objectively. I don't know. Do you know who kind of does that? Like if it's not the charity what kind of organisation?'***
>
> London, Day 2

It was noticeable too that participants' valorise third sector organisations that have locally specific environmental

remits (such as local wildlife and river trusts). These are organisations perceived to have practical know-how (they are *'people with the knowledge […] people with all the qualifications'*) and embedded in their communities. In this participants often saw in PES schemes the potential for community-based activities in which people learn from, and act in the service of, their local natural environments (particularly children, young people and offenders). Other positive attributes include the idea that people would be more likely to donate money to schemes if the third sector is involved (*'it's not about profit, people are more inclined to donate you know'* and *'if people walk round and enjoy it and see that they can make a voluntary contribution, they'll be inclined to do that'*). There was also some argument among some participants to suggest that charitable status was a good mechanism for PES co-ordination because charities cannot be easily closed down.

> ***'If you give the scheme charity status, it means that it can't be closed by the local authority or anybody because it's valuable. So they can keep it as long as there's a committee there and interested in running it, it stays alive no matter what anything else is said by anybody'***
>
> London, Day 2

Cutting across this concern was a more general concern that money could be wasted in the scheme implementation process. The need to ensure that the administration of schemes is not resource intensive was considered to be important or people might be charged more for the same ecosystem services, or less might be provided for the same price. Within this the need for intermediaries was sometimes questioned in the stimulus examples, as participants sought to work out how money could move more efficiently between buyers and sellers of ecosystem services. Again, the example which generated significant concern was that of the management company collecting and distributing the levy for local environmental improvements:

> ***'Do you need [the management company]? Can you not just go from [residents] to [farmers and wildlife trust] if they are very good?'***
>
> ***'Can you just pay [the company] just the fee? Presumably you've got to pay them a salary.'***
>
> ***'What do you need? Put there a manager and the secretary?'***
>
> ***'All the rest of it.'***
>
> ***'[The farmers and wildlife trust] can deal with those [residents] direct surely? […] surely they can do the job of the estuary management company? It's very management heavy isn't it?'***
>
> ***MDR 'Yeah okay. Any more views on that?'***
>
> ***'[…]forget the middle man. The middle man, yeah. That's an extra lot of trees and...'.***
>
> ***MDR 'So leave it to the Wildlife Trust. Do they interact with them?'***
>
> ***'Well they are an expert in their field aren't they?'***
>
> ***MDR 'I'm just making sure.'***
>
> ***'They are a recognised body who are experts. Why shouldn't they deal with it? You are right.'***
>
> ***MDR 'If [the company] had to be there for whatever reason how would you want to make sure that it was accountable?'***
>
> ***'Should there be a company?... If it's a company it's just too many salaries to pay.'***
>
> ***MDR 'Okay. Any other views on that? '***
>
> ***'[…] They've got to be independent'***
>
> ***'But can it be profit making then?'***
>
> ***'They can't be profit making'***
>
> ***'They will be profit making otherwise somebody has got to pay for them surely.'***
>
> ***SPEC 'They might be charitable'.***
>
> ***'They won't be charitable will they? Or wouldn't they?'***
>
> ***SPEC 'They could be. There is no reason why they couldn't be.'***
>
> ***'Is it about just ensuring that the money gets to the farmers and the Wildlife Trust?***
>
> ***I don't know; it's difficult isn't it?'***
>
> ***SPEC 'Which would be the... So you've got the money coming in [to the company]. The payers are paying money and it ultimately wants to go to managing the environment by the Wildlife Trust and farmers. And this [company] will reduce the amount of money that gets from [payers] to [providers] because they will want to, they will want their... I suppose it's a question of balancing what gets from there to there so that there gets...'***
>
> ***'[The company] are going to take a cut aren't they?'***
>
> ***SPEC 'They are going to take something that could be going to providing services'***
>
> London, Day 2

Or, for a truncated version of the same point:

> ***'The annual levy they are collecting, they are not just going to do it for free. They are going to have to hire people to sort out management to do that, so technically they are making money. So say like 30,000 a year of what people have paid they are keeping that themselves. It's not going onto the actual sites…. they are kind of gaining themselves'***
>
> London, Day 2

In short, participants had a keen eye for the way in which money might actually be lost within complex intermediary processes. They valued approaches that kept these intermediary processes stripped back and allowed monies to be directed towards scheme objectives. Participants acknowledged that third sector organisations are no panacea for mitigating overheads and administration, and the greatest concern was about the potential role of companies in PES schemes.

There was also general confusion about who these schemes would be accountable to, with participants tending to resolve this by suggesting that schemes needed to be co-ordinated by a broad cross-section of stakeholders. They imagined management groups and committees that included, variously:

- Buyers of ecosystem services ('No payment without representation');
- People who are elected to represent the interests of the local public ('councillors');
- Local environmental experts from NGOs (e.g. 'wildlife trusts') and governmental delivery bodies (e.g. SEPA; EA; NE; SNH) to inform and monitor, including experts who understand the bigger ecosystem services picture;
- Local businesses (' business associations') to build wider support and interest ('Always good to get local businesses involved');
- Providers of ecosystem services (e.g. 'farmers') to convey a practical perspective and provide a 'counterbalance'.

As participants made these suggestions they also frequently ended in a position of self-critique. They saw risks that the delivery of these schemes may become congested in their aims and priorities and that the impartiality of multi-stakeholder processes also made delivery *'top heavy'* and came with a *'burden'*, not least again drawing resources out of schemes.

> ***'You're got to be very careful because a camel is a horse designed by a committee. What you tend to find if you get too many people involved without any great knowledge or experience it doesn't always have a great outcome. You get lots of different things that don't have any great benefit instead of a homogeneous thing that has a lot of benefits'***
>
> ***'I have a problem, if you take away the intermediaries, who resolves the skews? Who sorts things out? You know. Management I hate even though I was 40 years in management. But somebody somewhere has got to make decisions. You take these people out who make decisions, if they are well what about the ramblers? They want to walk through whether they've got ground nesting birds and things'***
>
> London, Day 2

6.5 Monitoring inputs and outcomes

An important condition placed on payment for ecosystem service schemes by participants was the need for clarity about what the money is used for (a bit like *'road tax'*). Participants wanted to feel confident that money was ending up in the right hands and was not being misused or directed toward unrelated projects.

> ***'Need to be very clear with what the money is being used for'***
>
> ***'Going on from what you were saying with our water we pay to fund the farming thing, you don't mind do you? You know it's on there when you read the blurb that comes from the water [company]. You don't mind that sort of thing because you know you are going to pay it'***
>
> ***'How do we know that all the money that's been collected allegedly for, is not just going into one big government pot? And then it might end up going instead to something completely different'***
>
> ***'It just gets back to if that's money, if the money is getting used properly. And I know there's set ups for it and all that […] if it was guaranteed the money to go to that then it would be a different'***
>
> London, Day 2

Some expressed concern that PES schemes seem directed towards activities that are hard to monitor in practice. For example, the management of land for water quality was presumed to involve many farmers and there was concern

about the consistency of good practice and whether good practice could be enforced especially over long timescales. There was also some concern that benefits might be undone through time, that schemes with obvious immediate benefits might be prioritised and there would not be guarantees built in to ensure the schemes were maintained into the future. Furthermore, there was a concern that money for the schemes may run out and the activities may collapse: *'unless you've got stakeholders, people who put money into it, they won't look at it. In five years' time they won't bother'*. Participants also commented that problems may arise when success seems to have been achieved. People may lose interest: *'if it does come to that state, people might not donate, if they've already seen that improvement. So it could stop the whole cycle again … that's the only danger'*. Others were more positive, suggesting that *'If things were planned well from the beginning they will naturally develop'* and create new cycles of investment:

> ***'Once you find that something that is quite happy and invest in it, it generates more investment doesn't it?'***
>
> ***'So you are saying there is a sort of natural cycle?'***
>
> ***'Yeah. It starts well; the chances are it will develop well.'***
>
> ***'If it's planned well ...'***
>
> ***'To begin with.'***
>
> ***'If they think more than five years hence.'***
>
> London, Day 2

When evaluating the idea of PES in this way, participants spoke about the need to measure outcomes. Quantitative measures of progress were valued highly and participants tended to emphasise measures such as level of business activity (e.g. *'foot fall'* and *'expenditure'*) as much as environmental outcomes. Some valued the idea of tying payment specifically to environmental performance and imagined the imposition of penalties where providers of services fall short. Some also saw local communities playing a role in monitoring progress as part of broader support for citizen science-type activities. They felt too that success should be celebrated and shared widely – newsletters, on monitors in gyms, social media – ideally by making progress against a baseline clear.

> ***'Making everybody see that they're working towards making something better, you can use that so you use it, draw a baseline, this is how, excuse the language, this is how s**t it was and look how much we've done on this, we're getting better and this is what's better, this is it, it's positive, this is what it was like and you're all contributing and you're all helping, this is all making it better, see it as a positive and not forget how bad it was'***
>
> London, Day 2

In one interesting elaboration of the idea of crowdfunding a PES scheme (see above) participants saw the possibility of payers triggering certain targets or activities to occur under a scheme, which could then be monitored:

> ***'So obviously you could download it off the internet and see how the money is being spent […] So you could obviously get information back that way […]You can monitor how much has been donated already. And they would be able to put targets of what is monthly donated […] targets on what they needed to be donated. And then after each point they achieved what they would be able to achieve with that money and so on with all the different targets […]say if they get £10 ,000s this is what they would do, this is what they'd be able to do. If it says "oh we've reached this point", you should be able to see it, that it's actually happened […] Because they've said we've reached this point, we've got this much money, this is what can happen. And then if it hasn't happened you know it's not'***
>
> London, Day 2

There was also a line of reasoning that the impact of a scheme would ultimately come simply from seeing or experiencing change – *'seeing the money doing its thing'* as one put it.

6.6 Conclusion

Overall, and with certain important caveats, participants in this dialogue viewed payments for ecosystem services schemes as potentially helpful mechanisms for resourcing the provision of ecosystem services at the local level.

Participants felt there were gains to be made in promoting mechanisms that reward and encourage people, although participants were sensitive about understanding PES in the context of wider responsibilities for good practice among land managers. A strand of dialogue viewed PES as a rural agenda through which canny farmers and businesses can profit from doing things they should already be doing, not

least because they also benefit from a clean and healthy environment. It was also common for the idea of 'polluter pays' to loom large within the discussion, implying that the level at which regulatory expectations for management end, and added value begins, is a grey area for participants. More generally, for some participants the idea of PES sounded rather market-orientated in outlook, reducing the governance of environmental assets to a transaction, so there was a need to make sure these schemes were viewed in the context of a wider investment in ecosystem services.

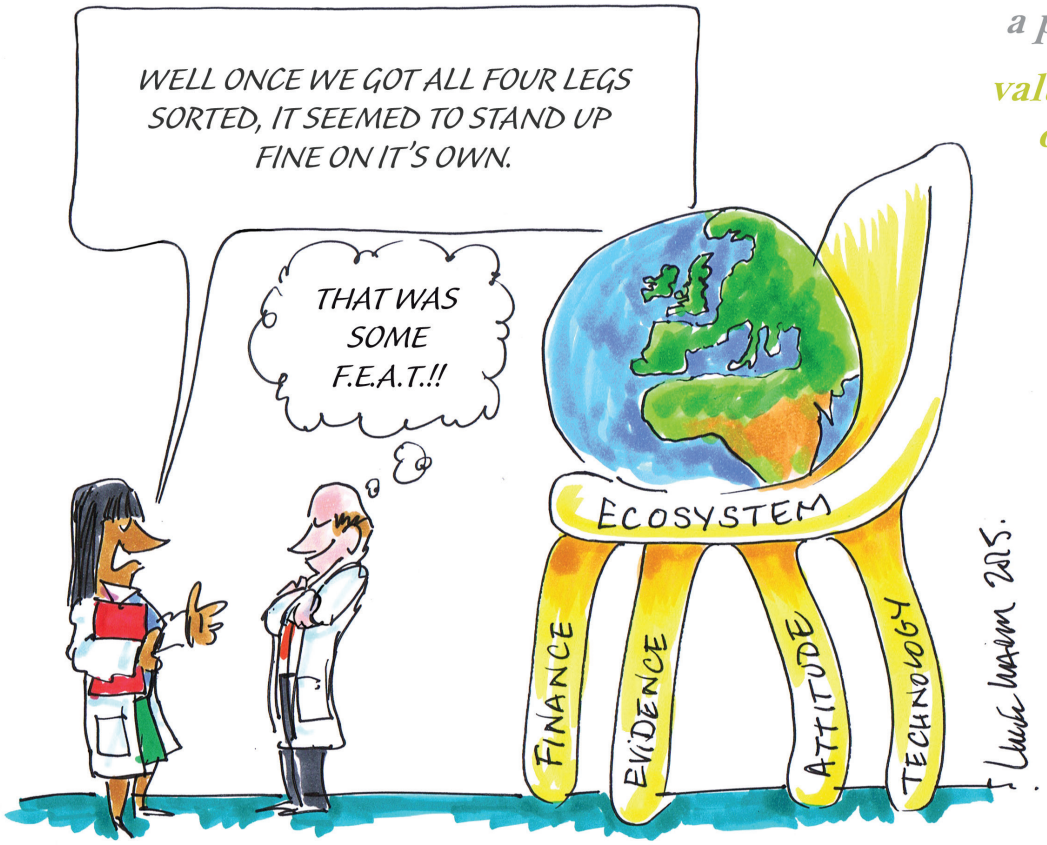
And yet, proceeding from the idea that the 'beneficiary pays', participants argued that there is a range of beneficiaries who might reasonably make contributions to these schemes: visitors, residents, local businesses, bill payers. What governed a large part of participants' concerns was to know that finances for these schemes are stable, that money goes directly to the things it is designed for, and that schemes are not governed by cumbersome administration. In all of this the role of state and third sector actors in administering and implementing these schemes was seen as an important guarantor of scheme credibility and success.

WHAT THE FUTURE HOLDS & DIALOGUE CONCLUSIONS

'Naturally Speaking …'

a public dialogue on

valuing and managing our environment



Dialogue Cartoons by Luke Warm

CHAPTER 7. THINKING LONG TERM: SCENARIOS AND VISIONS

Summary

- Participants considered the long term future of UK ecosystems in terms of key emerging risks, challenges, opportunities and aspirations. The storylines of four NEA scenarios were used as provocations for debate. Participants also created their own visions of the future for UK habitats and how these might be realised.
- Participants took a favourable view of NEA scenarios that promoted management of the natural environment in terms of its multi-functionality and the provision of ecosystem services. Maintaining the natural environment in terms of its cultural and wider quality of life value was considered an important element of this. Scenarios that combined strong roles for state and civil society and invested in technology were also commonly favoured. Conversely, there was a strong negative reaction to scenarios where markets reigned freely, or where national self-sufficiency narratives predominated.
- Visions of the future produced by the participants reinforced and extended themes discussed in the context of the NEA scenarios. Participants emphasised desirable futures in terms of: multifunctional uses of the environment; social values cohering around environmental care; active participation of communities in decision making; pluralistic forms of evidence to inform effective management; a strong leadership/enabling role played by government; and the important role of technological innovation for sustainable landscape and ecosystem management.
- In terms of key areas for action in realising desirable futures, four key themes emerged:
    - The need for a strong and developing evidence base, built around publicly funded investments in science, and augmented by the inclusion of wider lay expertise;
    - The need to shape social attitudes through programmes of education and media campaigning to raise awareness, create a shared vision and take action;
    - The need to develop novel funding streams to finance pathways to environmentally sustainable futures, as well as penalise and incentivise behaviour through market and state instruments;
    - The need to innovate and invest in technologies to mitigate environmental bad and promote efficiencies in how resources are utilised.
- The overall picture that emerged is an understanding of future ecosystems and their management that overall shares many of the characteristics and arguments of the NEA's underpinning philosophy.

7.1 Introduction

One of the dimensions of the dialogue was to explore participant views on the future of our changing ecosystems and to ask them to comment on long term priorities for policy development and practice. Although these concerns cut across the dialogue as a whole they were the primary focus of the third dialogue event and had two key components.

First, we explored participant values and assumptions about the future by asking them to comment on a selection of NEA future scenarios.[15] The purpose in this context was to use the scenario storylines as provocations about long term environmental change, and to draw out people's general views on emerging risks, challenges and opportunities for the natural environment. We used four contrasting NEA scenarios to encourage discussion, namely: *Nature@ work; Green and Pleasant Land; National Security* and *World Markets* (see Box 7.1). During the dialogue process a stimulus presentation was given to explain the purpose of scenario building under the NEA, and to introduce the key dimensions of each scenario narrative. We also gave participants specially designed cards on each scenario to illustrate their main parameters through simple imagery and written statements (see Figures 7.1-7.4).

Second, and from this basis, participants were asked to craft and visualise their desirable vision of the future in 2060 and to consider the types of actions that would be necessary to achieve this. Again, each group worked in the context

[15] Derived from the UK NEA 2011. For a full overview of the methodologies, assumptions and modelling work driving these scenarios and qualitative and quantitative components see Chapter 25 of the Assessment

Box 7.1 The scenarios in summary

- *Nature@work*: a scenario in which the promotion of ecosystem services through the creation of multifunctional landscapes for maintaining the quality of life in the UK is widely accepted;
- *Green and Pleasant Land*: a scenario in which a preservationist attitude arises because the UK can afford to look after its own backyard without diminishing ever-increasing standards of living;
- *National Security*: a scenario in which climate change results in increases in global energy prices forcing many countries to attempt greater self-sufficiency (and efficiency) in many of their core industries;
- *World Markets*: a scenario in which high economic growth with a greater focus on removing barriers to trade is the fundamental characteristic.

of their allocated NEA habitat (i.e. upland landscapes, farmlands and woodlands, urban, and costal and marine environments) and were instructed to create their vision by outlining the physical qualities/attributes of this particular landscape/habitat; the nature of its economy; the attitudes and values that people hold towards it; the governance arrangements that shape it; and the role that science, technology, education and learning might play within it. We specifically introduced participants to the NEA's responses framework to inform the characterisation of these visions and how they would be achieved.

In the first section of this chapter we present participants' reactions to the four scenarios. We consider what participants liked or disliked and the grounds on which they found these scenarios probable (or not) as propositions about the future. General patterns of agreement and disagreement about the future are then summarised and analysed. In the second section we elaborate understandings of and priorities for the future specifically in the context of the four habitat groupings. Although there was no single vision of the future articulated by participants, we argue that the dialogue reveals a recurring set of pre-occupations governing desirable futures for UK ecosystems and how these may be realised.

7.2 Reactions to the NEA scenarios

Participants in the dialogue were generally reluctant to be too prescriptive about what the future will hold (*'if you can predict the future you're not looking far enough ahead'*) and often prefaced their remarks by emphasising that the environment and social norms are always changing so there remains a need to adapt and revise expectations. We nonetheless found that participants expressed strong and generally unambiguous views about the future when presented with the NEA scenarios.

7.2.1 Nature@Work

This scenario describes a future that approximates very closely to the values of the NEA itself. It describes a society that values nature for what it provides or does for people, one that accepts the need to create multifunctional landscapes to maintain ecosystem services and quality life. The goal of 'balanced service provision' is a key preoccupation and the management of ecosystem services is the result of careful evaluation of trade-offs through scientific and community-based review.

Overall, we found this was the scenario viewed most favourably across dialogue groups. Participants felt it offered the most positive outlook and thought it would maintain the best balance between economics and the environment, as well as take a global view. The idea of creating multifunctional landscapes resonated very positively with participants. They discerned and welcomed the scenario's holistic outlook and the way issues of interconnectivity and consideration of trade-offs were being accommodated.

> ***'Because, it just seems to be maximising and using your environment to the best of its capabilities, but not destroying it at the same time'***
>
> ***'It seems to have a very positive ending to everything really'***
>
> ***'You have got multi-purpose landscapes and everything just seems positive and it is the only one that I can see really that seems to have that'***
>
> Birmingham, Event 3

Participants argued this pathway was most likely to maximise the potential of natural resources into the future, and saw in this scenario a framework in which the natural environment would need to be actively managed and

Figure 7.1 Nature@Work*

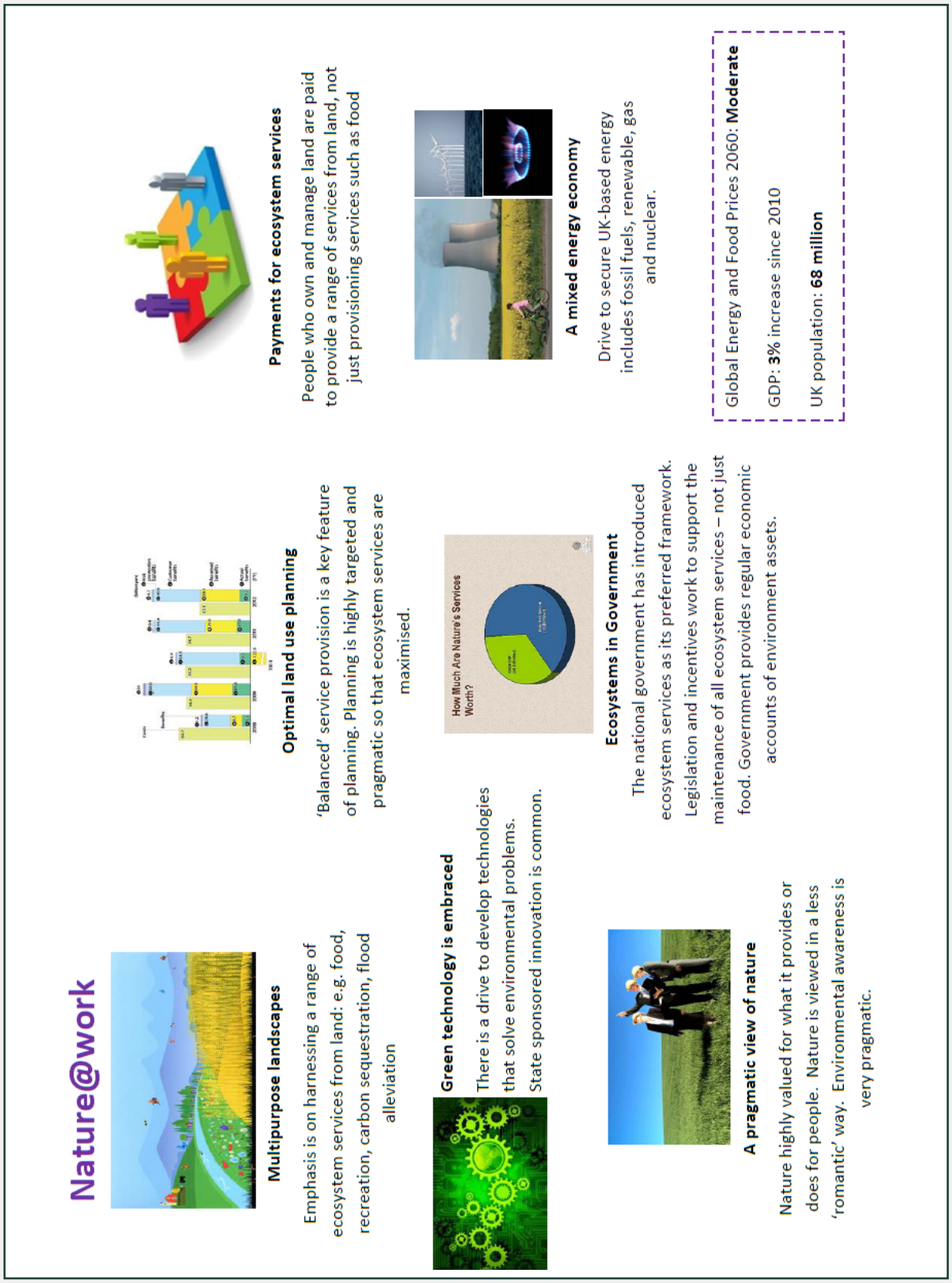


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Table 7.1 Salient remarks on Nature@work

KEY LIKES	KEY DISLIKES	PROBABILITY
• Positive outlook; suggests a positive ending to everything. • Less dictatorial. • Works for the world. • Takes the long term view. • Practical and pragmatic. • Holistic; embraces what is available and makes the most of it. • Multipurpose landscapes. Everything works together – interconnectivity. • Values cultural services as well as provisioning, and supporting ones. • Balance between the environment and economy. • Aspirational, mixed energy economy; new technologies. • Good GDP projections.	• Using the environment for economic gain [it means] you lose the balance. • Sceptical about the use of nuclear energy. • Trade-offs: if you aim too much on green spaces in one area other areas will be eventually over populated. • No clear assurances given about regulations for the management of water quality and quantity.	• *Positive probability:* it can happen because all the other options will eventually fail. • *Negative probability:* large parts of the world population do not think about nature when they consume, especially energy wise. • *Conditional probability:* can happen if the right people work together to apply the ecosystems services approach.

encouraged to deliver benefit to humans, such as through applications of technology.

> ***'Yeah, I think what stands out to me is 'nature at work'. Because – well, as I said before, we don't let nature do what it wants to do.'***
>
> ***'But nature does need help and support.'***
>
> ***'Yeah. Needs back-up.'***
>
> ***'Yeah. It's not a self-functioning. And with all the development, if we can act upon it in a positive way.'***
>
> ***'And get involved.'***
>
> ***'Exactly. That's going to enhance it.'***
>
> Birmingham, Event 3

Some participants further argued that this scenario conveyed the idea of ecosystems being harnessed and managed according to their respective strengths and stage of development. For example, one participant made the analogy with a system of cogs where the biggest moved slowly, while the smaller went faster, but they worked together towards a common target.

> ***'It is quite good because the cogs are all different sizes and the larger cogs turn slower than the smaller ones. So some countries will develop quicker than smaller countries. They're turning at different speeds'***
>
> Glasgow, Event 3

The use of a mixed energy economy was also one of the aspects participants found appealing in this scenario, and they described this element as *'aspirational'*. They felt that it conveyed a future in which risks were being spread, and again reinforced the idea that technological innovation was being aligned with environmental goals. There were also participants who remarked positively that GDP prediction modelled under this scenario was higher than others.

Some participants appreciated that ecosystem services would be the preferred framework of this scenario because this was thought to ensure continuity and consistency in approach (*'which is what we will need'*). There was support for the use of payments for ecosystem services schemes to incentivise the provision of wider public benefits, although some reiterated concerns expressed in Chapter 6 that market-based mechanisms might be used for profit generation, rather than to serve environmental goals (*'Don't like the ecosystem services payments – It just feels as if some people are maybe just going into it for the financial side of it. […] in some ways it can be abused'*), leading to the wider corrosion of ethical and moral values associated with the natural environment (*'Using the environment for gain [means] you have lost that balance, haven't you?'*). Nonetheless, in a world where 'things are changing' many concluded that Nature@work would be the most probable scenario to be realised in the long term. Some argued that eventually this logic would prevail as all other options would prove themselves absurd.

Figure 7.2 Green and Pleasant Land*

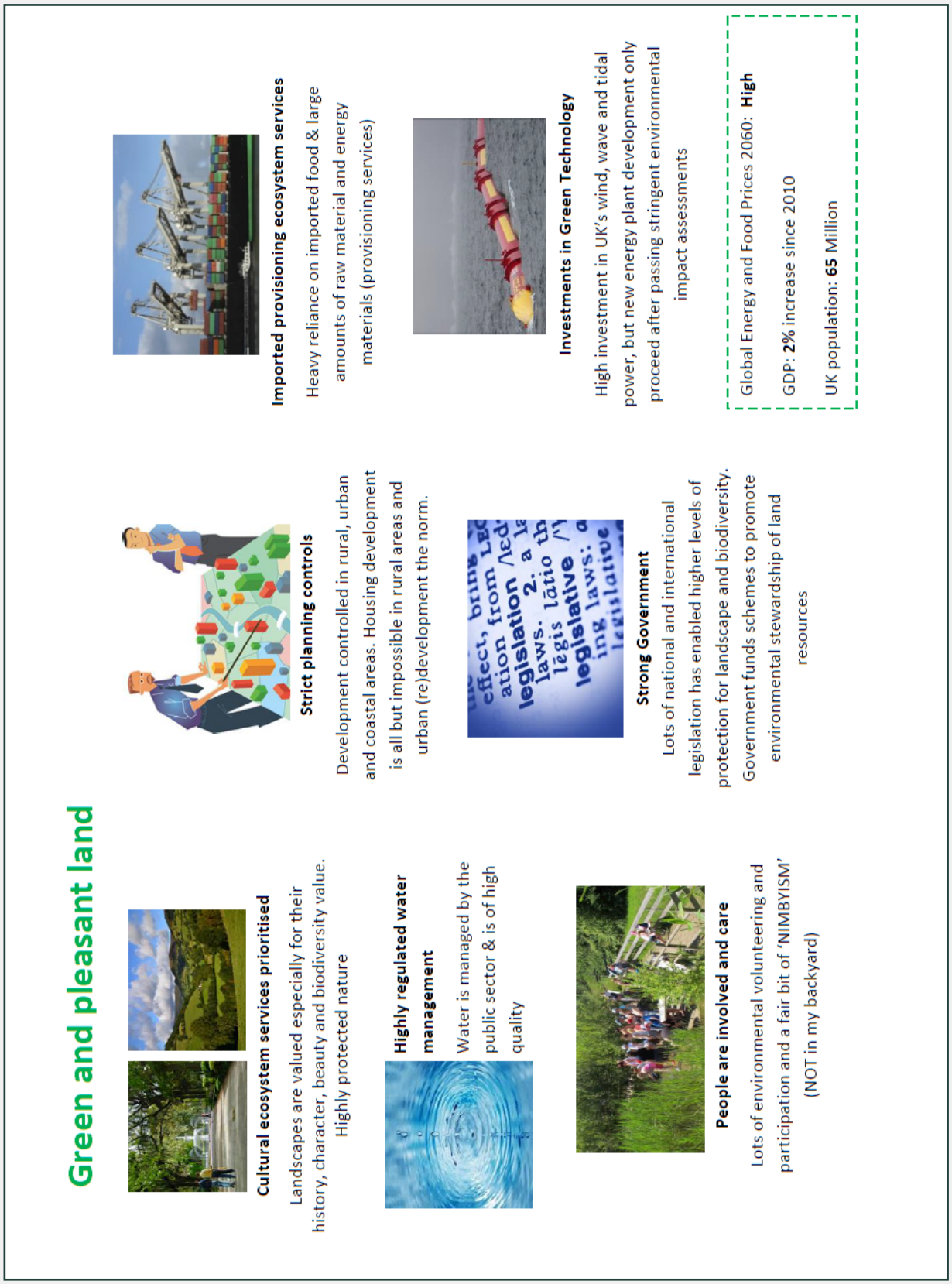

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Table 7.2 Salient remarks on Green and Pleasant Land

KEY LIKES	KEY DISLIKES	PROBABILITY
• Utilises existing resources • The preservation of cultural landscapes. • People are involved and care. • Promises a balance between green and built spaces in urban environments. • It covers the whole community: rich, poor, and any ethnicity. • In theory, it seems to offer the best planning. • Strong government control. • Highly regulated water management • Communities work in conjunction with governments for a better environment.	• Controlling in a negative way. • Heavy reliance on imported food and energy raw materials. • It seems too perfect; too ideal and probably will never work.	• *Positive probability:* Governments will invest in green technologies. • *Negative probability:* it can never reach its aspirations by prioritising the beauty of the landscape over the wealth of the individuals within the country. Always an economic driver. • *Negative probability:* Cannot sustain a green and pleasant land if population increases as you have to address housing needs that lead to more development. • *Conditional probability:* Possibly can happen in combination with world markets.

'You start with the world market scenario. But actually something will happen because it can't sustain… it can't be sustained in the long term. And then one of two options, either we'll become very scared and we'll adopt a sort of looking at ourselves or nature at work type, the sorts of things we heard about last time will kick in'

Exeter, Event 3

7.2.2 Green and Pleasant Land

In the NEA 'Green and Pleasant Land' is described as a scenario in which cultural and intrinsic values for nature are emphasised. The countryside is a highly managed cultural landscape, with policies focused on protecting, maintaining and improving its aesthetic appeal for tourism and leisure, with less emphasis on the provisioning services of food and energy.

Again, a significant number of participants were attracted to this scenario. They valued highly its cultural focus and the emphasis on promoting wider quality of life benefits from the environment. They liked the presence of strong government enforcing regulations and creating schemes that helped ensure sustainable approaches to land and water management. Investments in technologies with low environmental impact were again valued highly. More generally participants appreciated the inclusive feel of this scenario (*'It covers the whole community as a whole. So rich, poor, whatever ethnicity you are'*) and welcomed a future in which communities would be actively involved and work alongside governments and organisations for ensuring a good environment. Some participants saw the scenario as providing all the things required for a pleasant life:

'I think green and pleasant land seems to be quite a desirable one from my point of view anyway and obviously everyone wants a strong Government and investment in green technology seems to be the way forward. Highly regulated water management is very important and compared to the world market one, all privately owned water quality regulations are less strict and that is a very, very important thing, I think'

Exeter, Event 3

'I think that's local communities working in conjunction with the government, in terms of forward progression for the future, and making things better so having better landscapes and things like that, a better environment'

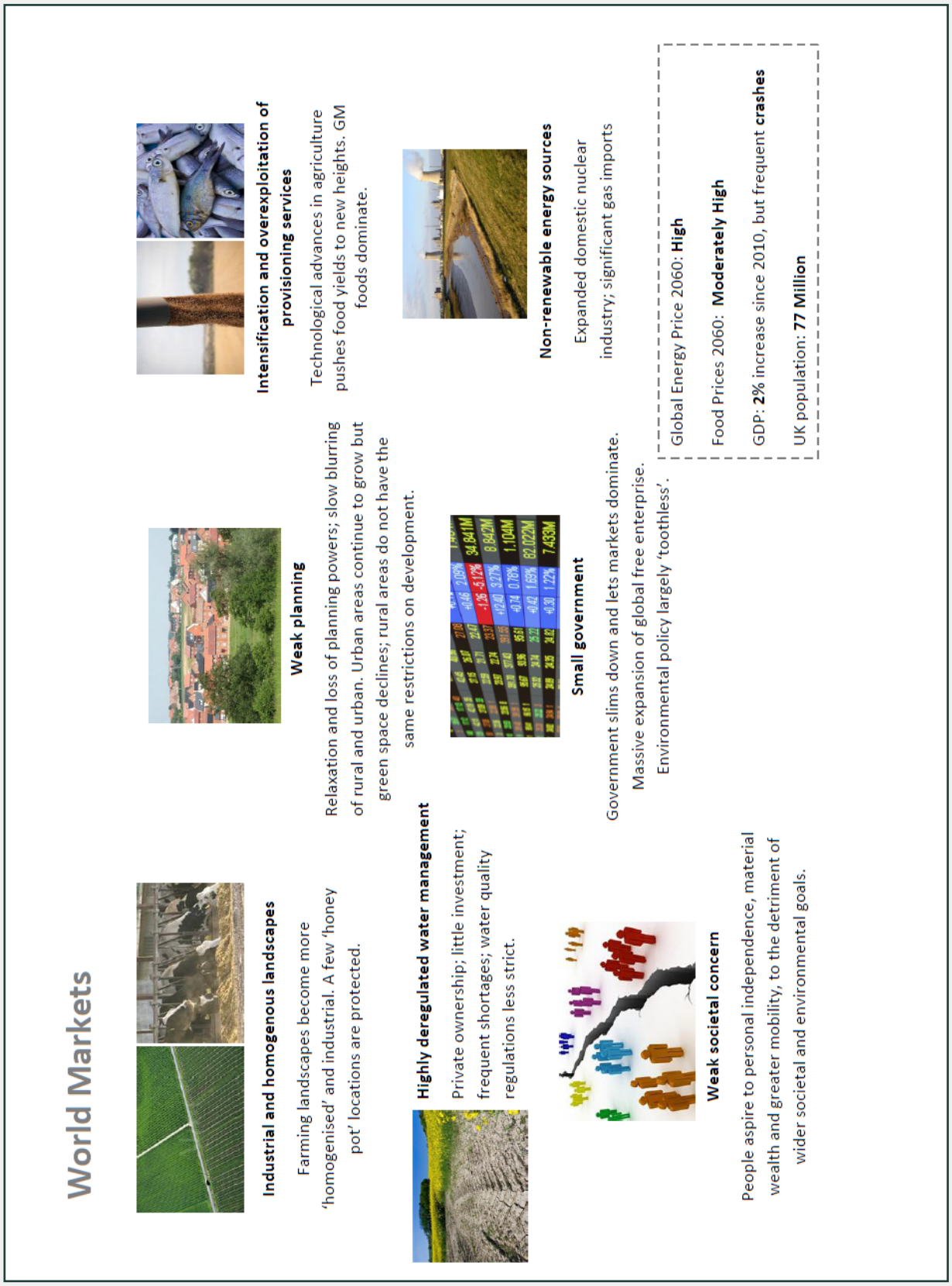
Birmingham, Event 3

'See if you were wanting to try and kind have a tick list of what you wanted from the environment in the future or if you wanted from your life in the future I think those titles for me would just tick the boxes. Things like highly regulated water management. Water's managed and is of high quality. People are involved and care. All of that for me I would say, if there was a menu you would want these things on'

Glasgow, Event 3

Participants discussing urban environments in particular referred to this scenario as the best proposition that would

Figure 7.3 World Markets



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improve quality of life in these surroundings. They felt it suggested opportunities for increasing the *'ration'* of green space *vis a vis* concrete:

> ***'I think this is very much towards our urban outlook as well, because although not in the urban environment, but it's centring it...you're going away and using the land … we need to have more balance between green and concrete'***
>
> Birmingham, Event 3

The main reservation with this scenario was its dependency on imports, particularly the provisioning services of food and energy. Some believed that it was a great risk to depend on others to help fulfil the country's basic needs because you cannot always guarantee sufficient supplies, but also because it is often difficult to have sufficient control of food quality.

> ***I think the whole importing bit is really bad. Yes, it's just a really risky place to be when you can't provide for yourself'***
>
> ***'Because the green and pleasant land, if we're going to rely on foreign food, it's a bit like relying on foreign gas – if somebody turns the tap off, you're in trouble'***
>
> ***'Yeah. And also as well, like you've got no guarantee of the quality of anything then. So it's almost like we can live in this really pretty place, but how do we know what we're eating is even – you know – good quality?'***
>
> ***'Green and pleasant land there's a heavy reliance on imported food … raw materials … import everything. So you're totally relying on other people for your survival. And also the prices are high as a result of that'***
>
> Glasgow, Event 3

Moreover, some participants emphasised ethical considerations and the implications such practices would have for other countries, arguing that the scenario was not sustainable because *'we are creating further problems around the world'*. Others pointed out that the scenario has wider negative environmental implications, such as encouraging climate change and having impacts on the functioning of the world's ecosystems.

> ***'It's not just us, it's the whole thing. If the planet dies, the planet dies, and we'll just be sat on our little green bit dying with it'***
>
> Birmingham, Event 3
>
> ***'Green and pleasant land, ok that's all right. But global energy and food prices are high. So that's obviously I'm all right Jack but stuff the rest of you, which you can't; I mean the ecosystem don't work like that. So it will end up catching us up, biting us on the bum somewhere in the future'***
>
> Glasgow, Event 3

In terms of probability some argued this scenario could only happen if there was a more realistic balance struck between productivity and the cultural benefits from nature. They also doubted that this scenario could ever deliver what it aspires to by 2060 because it implied that people would be fully committed to, and have a deep understanding of, their natural environments.

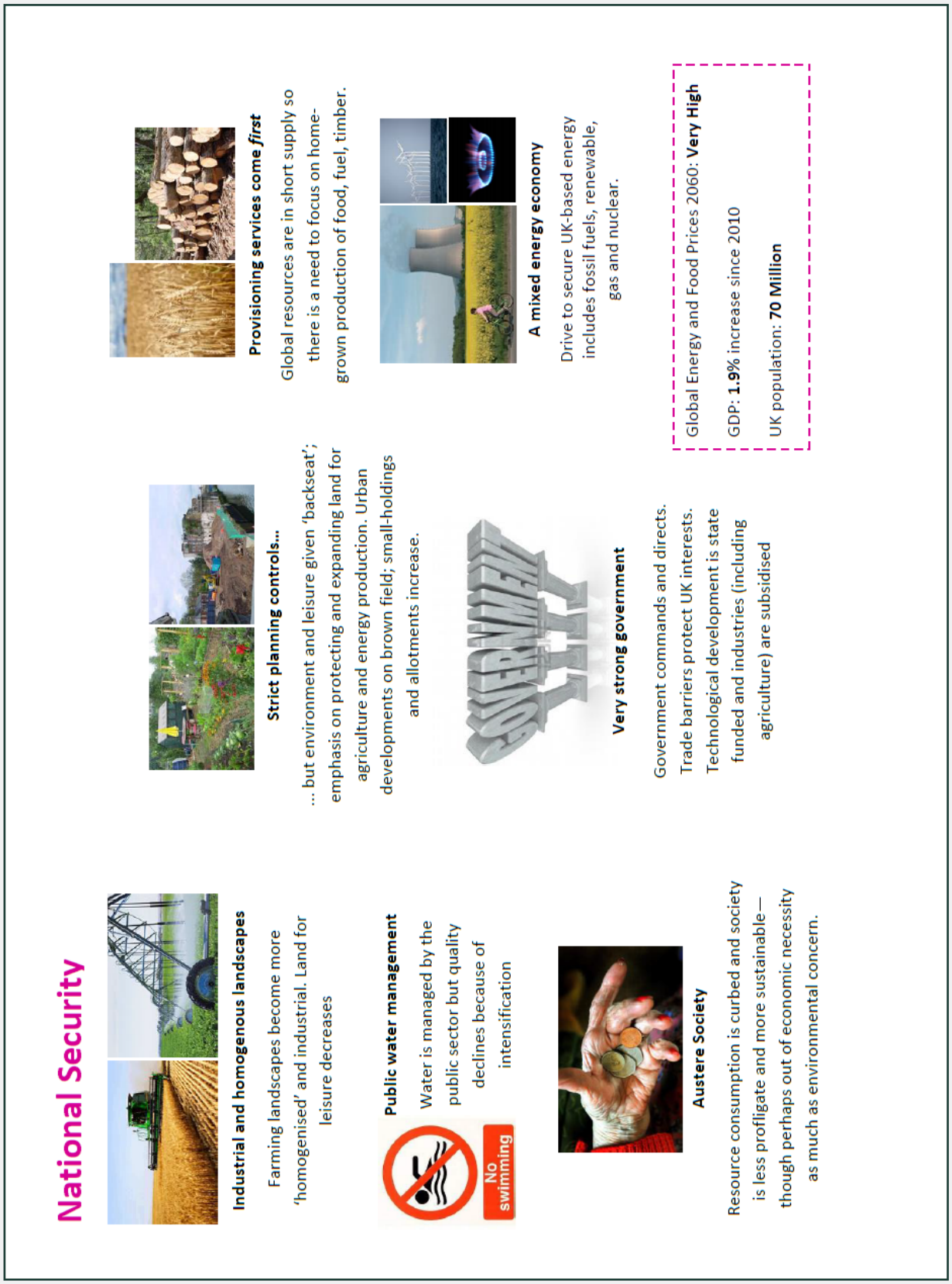
7.2.3 World Markets

The World Markets scenario describes a world driven by economic growth through the liberalisation of trade regimes. International trade barriers have dissolved, agricultural subsidies have disappeared and farming is industrialised and large-scale. Consumption in society is high, which results in greater resource use and more imports. Competition for land is significant, and this, coupled with a decrease in planning regulations for housing, agriculture and industry, means that biodiversity is often the loser. Technological development in all industries is mainly privately funded and is burgeoning.

The scenario of World Markets was certainly the least popular amongst participants. There were many who found it *'frightening'* and some predicted that if society went down this route *'we're doomed'*. Other participants said that *'it sounds too extreme'* and *'what you see in the films after a nuclear war!'* Another participant said *'it left me absolutely cold'*. There were many negative feelings expressed about this scenario:

> ***'I had a look at world markets and I can't really see much of anything positive to say at all – [LAUGHTER]. I am struggling to find anything good about that'***
>
> Birmingham, Event 3

Figure 7.4 National Security*



*card created using images from the public domain or licensed under a Creative Commons Attribution 3.0 Unported License .

Table 7.3 Salient remarks on World Markets

KEY LIKES	KEY DISLIKES	PROBABILITY
None	• Too profit orientated; power concentrated in large and distant political and financial centres. • It does not provide assurances for effective water management. • Less home grown food while GM foods dominate. • High energy and food prices. • Weak planning regulations. • Small governments. • Augments economic inequalities within and between countries. • GDP's constantly crashing.	• *Positive probability:* It is a continuation of the current situation where money dominates everything and the focus is always on growing the economy.

'[It will be] to the detriment to wider societal and environmental goals; it is just focusing on money production'

Exeter, Event 3

'It's quite frightening if you think about it, and what is going on in the world. You don't know where

trends are going to be. Will there be anyone left to trade with?'

Glasgow, Event 3

In general, there was general mistrust of any government that supported the philosophy of the *World Markets* scenario, since it seemed to redirect power to global financial and political centres. Participants were concerned that *'governments create world markets and world markets create greed'* and expressed disappointment that the world already seemed to be following this path. They rejected this scenario because, for instance, *'it is all about finance, politics and banking'* and *'[I] don't like the fiscal side of it'*. This was felt to work to the detriment of the environment and the interests of wider populations. *'Poorer people will get poorer'*, while a small minority would maximise their profits. Participants particularly disliked the idea that decisions for the management of local resources would be made in distant centres without public participation.

'With the world markets though, it's more of the powers being in the people at the higher levels. There's less participation from the local community. So it's out of our hands'

Birmingham, Event 3

Some participants were also concerned about more practical issues such as deregulated approaches to water management and relaxed planning regulations:

'I'm just reading here about the world markets. … Could be shortages of water … water quality regulations less strict, so that means there's going to be less water and the water that we do have is not going to be high quality which is quite worrying'

'The only thing I would hate to see and would really get my back up is weak planning! Where they are relaxing the planning in urban…I would hate that!'

Birmingham, Event 3

Moreover, this scenario tended to emphasise the needs of individuals, and seemingly disregarded any concern for enhancing social relationships. Some argued it could never sustain itself.

'My main complaint with economics is some of the fundamental axioms where its foundations are arguably and inherently incorrect. And so the world markets perspective, I do agree that there is a serious potential for collapse in terms of some built in care for your fellow human being. The basic axiom is rational man who is inherently self-interested and we can't, that's unsustainable from an environmental perspective'

Exeter, Event 3

However, others considered this scenario to be the most likely future as it was claimed to reflect the principles of the current economic system. These participants did not feel

things could change dramatically by 2060 and highlighted the role of the mass media in effectively shaping mindsets in this direction (*'Money is dominating everything. They forgot to put in here the media because the government reacts, kneejerk reactions to anything that happens'*).

7.2.4 National Security

Under the National Security scenario the focus is on greater self-sufficiency and efficiency in many of the core industries. Food, fuel, timber and mineral resources are prioritised over the conservation of biodiversity and there is a reliance on a heavy government hand in setting policy for ecosystem service provision and in creating a competition-free environment for industry within the UK. Technological development is state funded and many industries (including agriculture) are subsidised.

Overall this scenario was unpopular with participants, although there were some elements of the scenario that appealed. One participant argued that this *'will be a horrendous vision for the future'*, another described it as *'scary'*, while yet another suggested *'it's very insular'*. Many rejected the idea of being isolated from the rest of the world and relying solely on national resources:

> ***'I would wonder about with the national security one is because we're such a tiny country, how could we actually do everything ourselves with the population that we've got? Would there be provisions for everyone? I don't think it actually... Well, I don't know [laughing] I'm not a scientist. But I can't see that – you know – that we would actually physically be able to do that really'***
>
> Birmingham, Event 3

There were concerns that environmental arguments would be undermined and risks to food and energy security would eventually result in overexploitation of national resources. Participants were also concerned that cultural services would be undermined since the focus would be on increasing food and energy production. Many appreciated the idea that there would be *'strict planning controls'* under this scenario, but were very concerned that the environment and its amenity value would be overlooked (*'environment and leisure are given a back seat'*). Green spaces would necessarily shrink and recreational opportunities and quality of life would be diminished.

> ***'I think national security concerns are inevitable as soon as the power of the market is brought to bear and people start scrambling for energy security.***
>
> ***And in much the same way that the recession has somewhat dwarfed, environmental concerns in the past five years I'd probably say that they were likely to in the next five or 10, 15'***
>
> Exeter, Event 3

The idea of governments controlling all aspects of life was also not appreciated by many participants. Some made analogies between this scenario and the notion of *'big brother'* and totalitarian regimes.

> ***'National security smacks of big brother, doesn't it?'***
>
> ***'If you could tell me for definite that national security was going to happen I (a) wouldn't want to live very long and (b) wouldn't have any children!'***
>
> Exeter, Event 3

However, other participants reflected positively on this scenario. They felt it was good to be able to produce locally and maximise the potential of each country in an era where global resources were becoming scarce. Furthermore, producing products locally equalled lower carbon emissions and that must be a good thing. The major concern, however, was energy sufficiency. Participants pointed out that under this scenario the state would need to harness and secure alternative forms of energy in the future.

7.3 Desirable futures

Our overall finding from consideration of the NEA scenarios is that participants took a very favourable view of scenarios that promoted active and strategic management of the natural environment in terms of its multi-functionality, with a high premium placed on maintaining the cultural and wider quality of life aspects of landscape. Within this, they tended to imagine desirable futures in terms of a strong state (such as retaining tights control on planning) and saw a place for major investments in green technology. These reactions developed out of a generally favourable view of the scenario *Nature@work* and to a lesser extent *Green and Pleasant Land*. While participants saw some virtues in the self-sufficiency narrative of *National Security*, overall they reacted negatively to the perceived defensiveness and insularity of this scenario and saw little benefit in a *World Markets* pathway, even though the latter was often seen as highly plausible.

With its vision of a world led by careful management and maximisation of ecosystem services, the general endorsement of *Nature@work* in many respects suggests support for an NEA view of the future. However, none of

Table 7.4 Salient remarks on National Security

KEY LIKES	KEY DISLIKES	PROBABILITY
• Self-sufficiency is a good thing as global resources are getting scarce. • Consuming products that are produced in close proximity reduces carbon emissions. • Provisioning services come first. • There are subsidies to finance a lot of projects. • Very strong government vision. • Represents a concentrated effort to utilise and find new sources of energy which is vital to society.	• Success depends on fluctuations of the economy. • We rely too much on self-sufficiency. • Implies less emphasis on environmental concerns and overexploitation of own limited resources. • Land for leisure is decreased and cultural values undermined. • It is insular; eventually isolates the country from the wider world. • It can create unstable relationships with other countries.	• *Positive probability:* Eventually governments will persevere. • *Positive probability:* UK can function on national energy supplies alone.

the scenarios was accepted without concern and critique by participants. Most suggested that a combination of conditions that governed *Nature@work* and *Green and Pleasant Land* would maximise the full productive potential of the natural environment, at the same time as protecting its resilience and cultural value. Indeed some participants regarded this as an idyllic combination (*'I think the combination of nature at work and green and pleasant land. That's kind of the idyll, isn't it? Without nature at work you don't get the green and pleasant land.'*)

Participants projected many of these ideas and concerns onto their own preferred futures for habitats, which are summarised in Figures 7.5-7.8 and which include key sentiments produced across each of the dialogue locations. Although the dimensions of each vision varied in detail, some common themes emerged, including: multifunctional uses of the environment; strong social values cohering around, and learning about, the environment; active participation of communities in decision making; pluralistic forms of evidence to inform management; a strong leadership/enabling role played by government; and the use of technologies to shape sustainable landscapes and ecosystems. In terms of key areas for action in realising the desirable futures four key themes emerged:

- The need for a strong and developing evidence base, built around publicly funded investments in science, and augmented by the inclusion of wider lay expertise;
- The need to shape social attitudes through programmes of education and media campaigning to raise awareness, create a shared vision and take action;
- The need to develop novel funding streams to finance environmental stewardship, as well as penalties and incentives through market and state instruments.
- The need to innovate and invest in technologies to mitigate environmental harm and promote efficiencies in how resources are utilised.

In the following subsections we elaborate some of the major dimensions of these themes.

Figure 7.5 Upland futures – 2060

The landscape

- Unspoiled and nice places to go and relax
- Quiet and serene villages
- Places rich in history and culture

Attitudes and values

- Wider respect for and awareness of the natural value of the environment
- Conservation ethos alongside the need for viable production
- Cultural, historical and spiritual values of habitat promoted and celebrated

Knowledge and information

- Uplands are places of education and learning; children and adults discover wildlife, natural habitats, plants and animals, insects and birds

Governance

- Empowered local communities that are involved in decision making and work together with authorities on shared visions and responsibilities

Economy

- Agricultural production follows traditional practices and supports local organic food production promoted within local economies
- Tourism is important; uplands are *'parks where people go to play'* dominated by leisure activities: walking, parachuting, and even skiing
- Sustainable and renewable energy production
- Visitor payback schemes support environmental projects and maintenance or facilities
- *'Tax' for uplands* incorporated into utility bills to further promote sustainable management and maintenance of the cultural desirable landscape

Technology and innovation

- Innovating technologies make energy production visually acceptable
- Suspended wind turbines
- Access by electric cars and trains only!

Figure 7.6 Enclosed farmlands and woodlands – 2060

The landscape

- Multifunctional green and lush landscapes with designated land uses
- Less large homogenous units and more small holdings
- Human presence is blended with the countryside in a harmonious way
- People live in tree and underground houses

Attitudes and values

- Cultural values based on respect and reciprocation – *'help others to help yourself'* – predominate
- Healthy diets are taken seriously; food is produced to high organic standards
- People consume more cautiously and there is less food wastage

Knowledge and information

- Farmlands are open educational parks; the public is openly invited onto land and gets to know about farming and understand how food is produced

Governance

- Strong community involvement in decision making
- Local resident associations control uses of land
- The return of town halls and more power to local authorities.

Economy

- Balance between food and energy production, and recreational uses.
- Leisure and eco-tourism activities contribute to the economy
- Communities producing for themselves

Technology and innovation

- Farms are powered by wind turbines and solar panels (e.g. electric and solar tractors)
- Energy efficient farm machinery (e.g. milking machines).
- Technical innovation ensures the use of soft technologies for higher productivity and efficient use of resources
- Use of less machines and more human energy

Figure 7.7 Urban and Urban fringe – 2060

The landscape

- More green spaces, more parks and leisure spaces in the cities
- City centres are pedestrianised and there are more train stations; less pollution
- Access to countryside is easy and people are able to escape without difficulty
- People in the cities are able to produce their own food

Attitudes and values

- Everybody understands more about the environment
- Cultural differences are respected
- People consume less; more ethically produced products

Knowledge and information

- Knowledge is handing down over generations
- A lot of scientific research into more efficient and renewable energy
- People learn by growing their own food and knowledge is transferred within and between social groups
- Programmes like Planet Earth teach people about ecosystems and the environment

Governance

- Local communities are involved in everything that's going on in the community, have a better understanding of the issues in stake and take part in decision making
- An independent body makes decisions which are validated by the community
- Strong governments work for people; incentives are provided for a better world
- Ecosystem services are used for all government decisions and policies

Economy

- Stable economies; use of resources is rationed; there is a well-managed and regulated water industry; people pay taxes
- Renewable energy offers the alternative for a cleaner world
- Governments commit to more ambitious sustainable development targets
- Micro economies around garden production and more self-sufficient societies

Technology and innovation

- Modern low carbon technology allows for less polluted cities
- All houses are equipped with energy saving technologies; solar panels on all houses.

Figure 7.8 Marine and coastal environments – 2060

The Seascape

- Reduced pollution around marine habitats
- Off shore housing systems with power stations underneath. Ships move between the systems and are powered from the stations

Attitudes and values

- Positive attitudes: people will care more about marine environments
- Kids and families, volunteers and local governments all help to clean up beaches and support people who live in coastal areas

Knowledge and information

- More substantial education about marine environments starts in early years at schools.
- A lot of scientific research is funded to investigate the true value of the oceans
- Citizens' science: local communities collect and contribute data and information
- The media are used to inform attitudes: *'Salty Street'* and *'Action Super Heroes'* on TV

Governance

- Governments work with citizens: government establishes an extra bank holiday; communities take action to help marine and coastal areas
- Landowners like the National Trust that own coastal land are taking action
- Enforcement and legislation is in place to protect this environment; wardens are patrolling beaches and issue on-the-spot fines
- Environmental issues are de-politicised; decision makers are taking a long term view

Economy

- More investment for innovation in marine energy; more wave energy generators
- Revenues from polluter pay schemes are reinvested into improving marine ecosystems
- Markets regulated; good practice subsidised

Technology and innovation

- New technology becomes smaller
- Innovations in energy, housing and boating; turbines and solar roofs are fitted on ships turbines and submerged power generators; energy is wi-fi'd back to land

7.3.1 Knowledge and information: creating the evidence base

In the dialogue we found that participants widely advocated the need for expert scientific knowledge to inform future ecosystem management (*'to find out what is available in the environment'*) and often spoke of the creation of publicly funded institutions to support fundamental research. This argument often translated into support for existing institutional arrangements, for instance, support for research undertaken by Natural England, the Environment Agency, the Marine Management Organisation in England, and more generally, applied programmes of academic scientific research.

However, participants did not believe that scientific expertise alone can keep pace with knowledge requirements. The incorporation and evaluation of locally situated knowledge into policy and decision making was also seen as a critical facet of the evidence-gathering required to grasp the complexities of future environmental management. Programmes of outreach events for general data gathering and acquisition akin to the idea of *citizen science* were suggested as playing an instrumental role in helping to develop the knowledge base:

> ***'Fishermen on the beach are catching a lot of stuff but are we getting enough of this information? Do we know what people find on the beach? This is all knowledge being lost for changes that are reoccurring'***
>
> Exeter, Event 3

On many occasions participants also suggested the use of social media (e.g. Facebook, Twitter and the use of apps) to mobilise citizens around these programmes:

> ***'I think more and more people are using apps for things and I think technology could be used more to make people aware and get them involved. Like, it could be like 'spot a bee' Day or something, how many bees have you spotted in your garden and that is it. People could be more involved in the research in a kind of modern way as it were. How many finches have you seen in your garden today?'***
>
> Glasgow, Event 3

One group even imagined the creation of a dedicated body that would facilitate meetings and knowledge transfer between the public, practitioners, scientists and policy makers. They called this the *'Ecosystems Agency'* that would be made up of representatives of various organisations and bodies (e.g. governmental bodies, private and public institutions, NGOs, and charities). This *'multi-agency'* would aim to find solutions to problems by sharing ideas and innovating. Its purpose would be to ensure the accumulation of ideas and to learn from amateurs and experts at the same time.

7.3.2 Attitudes and values: the need to educate and influence people

Raising awareness and promoting environmental education and awareness was a primary consideration expressed by all groups in all locations throughout the course of the dialogue, and it emerged as a priority component of the long term future:

> ***'In 2060 if we carry on not accepting that is not going to be changes in the natural environment we are not going to be relatively comfortable waiting where we are now. The environment is going to get worse. So we do have to make sure that people are aware of it. We need to say people why we are doing what we are doing why the ecosystem processes are important'***
>
> Exeter, Event 3

Participants had a holistic view of education and argued for approaches that were not restricted to the classroom and to certain ages but extended to continuing and life-long learning for all groups in society. There was a need to educate all actors (*'farmers, agencies, businesses, civil servants and environmental officers as well as the general public'*) and for education to be tailored to the needs of particular learners. *'Education is going to be appropriate for the people you are trying to educate'*.

The first condition for this was to communicate the message without jargon, though participants argued that learning requires imaginative engagement and they suggested we needed to *'make nature sexy'*. Traditional models of learning alone are not enough to communicate the complexity of ecosystems and influence environmental attitudes. The best way to achieve effective learning at all levels is to employ an approach of *'experiential education'*. We *'need to excite people'*, participants said, and suggested that there was a need to take people out to *'ask them to do things and learn from life'*. One group suggested that forums and educational projects should take place in the open countryside e.g. farmlands, woodlands, valleys and uplands, as students can be inspired and encouraged by direct

engagements with the environment (*'Move education out of the classroom onto the moor; help people learn from their own experience. We need to help people learn how things are joined up; how the system works'*). Others suggested making knowledge openly available to people by bringing it into the streets; using *'Eco-Vans'*.

> ***'Imagine if you had, you know those vans that used to go around, like the library vans, for adults and adults were learning […] You could have a van stuck outside Tesco for when you go for your shop you might go in and say, oh that would be interesting; […] and this is like a kind of African mud hut and it draws you towards it to find out what it is about and then you can go inside. '***
>
> Glasgow, Event 3

Innovation in teaching, at schools and elsewhere, would help transform information about ecosystems into forms easily absorb and memorised. Some argued for setting ecological messages to music in order to *'teach the world to sing'* the environmental tune. Calls for more structured and mandated approaches were raised by several groups during the dialogue. One group argued for 'Involuntary voluntary' (Sic.) service or a national service for the environment, that would encourage people to spend part of their time learning more or doing something useful for the environment. Another created the so-called *'upland curriculum'*, a life-long education programme spanning from early years to third-age education equivalent to national service. Citizens would learn about the importance of nature and the interconnectivity of environmental issues. Some imagined it based on experiential education and involving the creation of *'environmental warriors'*. They saw it as a practical educational scheme which every citizen should complete at some stage in his/her life. There might be an exam which would be compulsory to certify good understanding had been achieved.

Measures that encouraged an element of competitiveness in raising environmental consciousness were also advocated. The suggestion of an *'environmentally friendly school'* award was one version of this argument. There would be accreditation rather like the level and character of Ofsted standards. Schools would be rated by the quantity and quality of environmental activities included in their curriculum and people would then be able to choose the most environmentally friendly schools for their children. This would improve school performance as they would compete to offer the best environmental education. In addition this would influence behaviours as the scheme would demonstrate to parents and the general public the importance of looking after our ecosystems.

The power of the media as means of persuasion and attitude-forming was identified by many participants (and considered a notable absence in the NEA's responses framework). Television and the internet could be used to raise awareness and gain peoples' support for specific projects that implemented the Ecosystem Approach. Participants on many occasions called for ecosystem-based storylines to be promoted for instance, via soap operas and other popular television programmes. They suggested information campaigns such as *'stop and think'* and *'have you mucked in today?'* that would consist of a range of provocations to help evoke and maintain environmental behaviours.

> ***'I presume that a lot of people watch at the present Coronation Street, Emmerdale and stuff like that. Well in 2060 they'll still have soaps. So it needs to be brought in with that to educate. On a billboard, Have you mucked in today? In other words have you done a bit of gardening? Have you got your hands dirty? Have you looked and helped your community?'***
>
> Birmingham, Event 3

Other examples included the idea of *'Salty Street,'* a soap opera similar to *The Archers* where the action unfolds in marine and coastal settings and ecosystem messages are insinuated.

More generally, participants maintained that desirable environmental behaviours occur through attitudinal change and identified a range of innovative methods that could be used to increase awareness about the benefits we get from the environment and the interconnectivity of issues. They suggested that social relationships were very important as they can help to transmit messages and transform attitudes. Respecting each other's culture and identity at any space and scale – urban, rural, working and learning environments – was paramount. Participants suggested that meetings such as *'public dialogues'* and *'forums'* should be organised with the aim of developing a shared vision of local ecosystems and enabling communities to work towards achieving it. During such events participants from diverse backgrounds would have the opportunity to make their preferences known and take ownership of issues.

There was also a suggestion for the government to establish one extra bank holiday for the environment. The *'environmental bank holiday'* would be a day for the

government to publicise environmental awareness and for everybody to offer different services to the environment. There would be a lot of projects from which people would be able to choose; the events would be hosted by communities and facilitated by local governments. Others argued for especially dedicated days to cultural and spiritual rituals that would help to raise awareness and thus benefit the environment.

7.3.3 Financing, penalising and incentivising sustainable ecosystems

Participants were asked to consider how their futures would be financed and how desirable behaviours would be encouraged. Often they discussed the role of financial penalties or rewards. This had a number of variants, including some discussion of the relative role of PES schemes or 'polluter pays' approaches to securing sustainable futures. Of particular note was a frequent emphasis on the creation of national or locally raised green taxes. Indeed, although potentially unpopular, public taxation for the environment was often considered an essential instrumental strategy for achieving visions: *'a necessary evil'* as one put it. Many argued citizens would accept this if they knew the ends to which taxes were put. One pointed out that this is *'not sort of a negative thing. It's actually positive' because 'people are actually taking responsibility and thinking about it and actually doing it for the good'*.

> ***'Nobody wants to really pay tax but if they see it's getting you somewhere then you quite happily pay it… You know what I mean?'***
>
> Glasgow, Event 3

> ***'Under finance we felt the key thing was tax. But it needed to be ring fenced tax. So you would have a line on your tax bill that said the funding for British Uplands is £5 or something like that.[…]It would be funded through our tax system'***

> ***'Tax which might perhaps be a pound per person or something like that – once again is ok as long as it's regulated, you know where it's going, you know how it's being utilised.'***
>
> Birmingham, Event 3

In one interesting deliberation a group of participants in Birmingham developed a tax and reward system for the marine environment which they termed the *'Behavioural ecosystem'*. Here, any company that followed practices or used raw materials that damaged marine habitats to create a product would pay a tax. Anyone who consumed these products paid a price premium. This revenue would then be used for a research or mitigation project that would improve the state of the affected habitat.

> ***'[Companies] pay back and reinvest. So because they're creating that product they reinvest money into the marine ecosystem itself, into the marine habitat. Also, the people who buy the products, the people who visit the coast and they buy the products they would pay some sort of maybe a bit extra because the item is damaging to the environment or damaging to the marine coast. So all this money that then comes in, this is what would finance perhaps keeping that marine environment as it is. It's coming from the people who are ruining it in effect.'***
>
> Birmingham, Event 3

On other occasions participants suggested people would need financial incentives in order to take practical action. For instance, tax breaks might be used as incentives for people who undertook activities that helped ecosystems, such as buying gardening equipment or machinery for growing their own food. Many independently highlighted the potential to ecosystem grade/label products and to connect this with consumer rewards, such as accruing *'club card points'*, to raise awareness.

> ***'The consumers start to make rational decisions about what they buy and how it is produced and hopefully this will shape the way people shop and consume. If people are educated and have the knowledge they will start influencing their behaviour and this then will influence policy makers'***
>
> Exeter, Event 3

> ***'And the other element of that was that there should be information of every single item you buy written down in a golden ring on its eco and social credentials. Not just on the box when you buy it but actually on display so actually when you buy, next to the product on the shop itself. So, it is a system of grading the environmental impact of any product.'***
>
> Glasgow, Event 3

7.3.4 Technological solutions

The need to innovate through investment in new technologies was an important and persistent feature of the future. Examples included energy technologies that would

be small and non-offensive to the eye, and precision forms of agriculture so that food production could be maximised from land. In some participant visions the land area was extended into the sea by using floating farms and energy was generated by suspending wind turbines from balloons a thousand feet into the air. Perhaps the most innovative ideas were those related to marine and coastal environments. In Birmingham, for instance, participants put wind turbines on ships, while in Exeter they created cities off-shore where submerged power stations supplied houses and ships with energy *in situ*.

> ***'So we said let's fit the ships with turbines that would generate electricity that would be wifi'd back that we could use on the land. We think there may be research needs to go into this'***
>
> Birmingham, Event 3

> ***'We thought leave Britain a green and pleasant land and build foundations for houses across the channels so we have a lot of houses either side of the ships with energy stations underneath'***
>
> Exeter, Group 3

Some participants also placed their hopes on the development of an electric revolution in transport systems. Trains and cars were mainly electric and people were using more kinetic machines (e.g. bicycles), while virtual reality reduced the need for travel.

> ***'And finally technology; we felt that this place was going to be so lovely that everybody would want to visit it and we'd have a big problem with cars and therefore we need to invest heavily in technology to deal with the transport issue. Monorail came to mind but also virtual reality. You may actually sit at home and visit our Uplands in 2060. So that was our cunning plan'***
>
> Glasgow, Event 3

Technology would be used to plan more green space to increase the use of plants in urban environments including the production of more food. Electronic devices would be installed in houses to warn people about the environmental impact of their practices. Technology will evolve to develop apps through which people will be able to check the quality and origin of their food and the environmental impact of the products they consume.

> ***'If you had something in your house that could tell your wastage and stuff like that and what the … in terms of CO^2 pollution and stuff, it might deter you from wasting as much … I don't know.[…] If technology is going to be the way forward'***

> ***'So what about managerial and consumption as well; so we have got these things about … fish … but what about the amount of fish that we are eating and maybe Apps for phones saying how sustainable certain fish are. Go to the supermarket and scan a bar code and there could be an App. But it should be … I mean you see the … programmes, you know'***
>
> Glasgow, Event 3

Funding would be directed towards the invention of smarter technologies that would enable further research and therefore enhance and fill in gaps in our knowledge about the natural environment. This was viewed as essential, especially for the marine environment which participants often felt we do not know enough about: *'We should be spending some of this money that these people who are using it are contributing to finding out what the true resource is of the oceans that surround us'*.

7.4 Conclusion

Discussion of the future in terms of risk, challenges, visions and responses provides a context in which the emerging themes of the dialogue can be reinforced and elaborated further. The overall picture that emerges is an understanding of future ecosystems and their management that shares many of the characteristics and arguments of the NEA's philosophy. Indeed, the desirability of a pathway to the future built around the multi-functional optimism of Nature@work, rooted in a holistic and strategic view of ecosystem service management, is discernible. This is also a future where government remains active and strong, where communities are enabled to participate, care and contribute, and where technology is advanced. In all of this the need to adapt according to changing circumstances was widely asserted.

CHAPTER 8. CONCLUSIONS

Summary

- In this dialogue participants articulated many and diverse ways in which the natural environment might be important for individuals and society and expressed concern about the future of their local environments.
- Participants were encouraged that an assessment of the scale, scope and ambition of the NEA had been commissioned by government.
- Concepts such as Ecosystems Services and the Ecosystem Approach are viewed generally positively though the dialogue suggested a number of concerns and challenges associated with adopting and advancing this way of thinking in policy and decision making about the natural environment.
- Participants offered a range of critical and imaginative suggestions for taking this agenda forward spanning issues of knowledge and governance, communication and understanding and the involvement of citizens within decision making.

At the outset of the dialogue participants articulated many and diverse ways in which the natural environment might be important for individuals and society. They recognised a fundamental and unambiguous connection between ecosystems and human well-being. These points were made across the board, despite an a *priori* variation in self-reported awareness and interest in environmental issues. Judging by our discussions, participants in this dialogue came to this process pessimistic about their local environmental futures. Many saw decision making as piecemeal and short-sighted in the planning of local environmental assets, and ill-equipped or unprepared to respond to the big environmental issues of the day: building more homes, mitigating flood risks, protecting urban green space, securing energy resources, feeding a growing population and ultimately, protecting nature as a life-affirming and life-enriching presence in their lives. It was against this backdrop that the NEA was introduced and discussed.

Overall, we found that dialogue participants were impressed that an assessment of the scale, scope and ambition of the NEA was commissioned by government. They saw in the NEA an effort to capture nature's importance in ways that could be linked to decision making. The NEA was considered an authoritative body of evidence about our changing ecosystems, undertaken by a committed scientific community. In general, participants found the Assessment a thought provoking and expansive framing of environment issues. It was felt to challenge pre-conceived wisdoms about what constituted the environmental agenda and was helpful in the way it placed environmental concerns at the front and centre of a range of policy areas.

> ***'So I think we are making progress. Yes I think for me it's more encouraging maybe, I don't know. I mean, I don't know, I think I feel very inspired. There's a new opportunity which I didn't know about'***
>
> London, Day 2

We found in this dialogue that participants were particularly taken by the holistic ambitions of the NEA and the implication that the environment needed to be managed as a system. They appreciated, but were daunted by the complexity recognised by the NEA and often used it as a contrast to experience. It was in this context that the NEA accrued its wider significance and support in the dialogue. At its most positive, some participants suggested the Assessment might serve as a modern day and environmental equivalent of the Beveridge Report, around which publics should be encouraged to rally.

> ***'I thought about what-, this is a small part of it. After the last session, here, I went away and then I came back and during the Second World War there was something, the Beveridge Report was drawn up, which is looking at the health and various things like health service, and it became a best seller and the public were really behind it. All of this National Ecosystem Assessment, it just seems to be that we're getting… we have got to a point, now, where we've got to produce something which the public are going to get behind. […] it needs to be joined up with all of the other factors that we're looking at so that we produce this plan. Rather than it being this bit, and that bit'***
>
> Exeter – Event 2

Many participants thus conveyed an urgency and restlessness about the pace at which this kind of knowledge is taken up into policy and practice and viewed the NEA as a body of evidence that will date very quickly indeed: *'Is anybody really listening?'*

Overall, we found that participants were either cautiously positive about, or constructively critical of, the underlying concepts and frameworks that have been developed through the work of the NEA and related policy and practice processes for the natural environment. From the perspective of environmental communications, the use of the 'ecosystem services' concept within decision making was not felt to be a good *initial* starting point for public engagement in environmental issues; the terminology was viewed as too obscure and technical. They also felt that the harmonising ambitions of the NEA framework gave it a rather bureaucratic and mechanistic feel that was off-putting. Yet, the dialogue revealed that many participants could work with this concept and absorb the driving logic, within a very short space of time and after a single introductory dialogue session. If ecosystem services struck some participants as a somewhat unusual framing of the environmental basis of human well-being, the concept and framework was enjoyed by most participants in a heuristic sense. People discerned a puzzle element to NEA when viewed in the context of decision making but with time they discovered and used the logic in their own terms.

In analytical terms the dialogue suggests that participants could readily distinguish the cultural, provisioning and supporting aspects of ecosystems. The idea of regulating services is a key area of confusion. Participants tended either to align regulating services with issues of governance, or see these as belonging within a broader sense of supporting nature: that is, background, non-obvious processes operating within in nature. It was very notable too how supporting services captured the imaginations of many dialogue participants. These services often became signifiers of a deeper, non-tradable, nature; one that should not be swapped for, or jeopardised by, the provision of low quality ephemeral material goods. Providing a basis upon which the trade-off of services can be explored in decision making is welcomed, but there is a need to build in appropriate safeguards for this deeper, sustaining, nature.

There was also some concern that the concept of ecosystem services might itself encourage, or be mistakenly seen to encourage, a consumerist outlook on human relationships with the natural world. Treating the natural world as a provider of services suggested for some that the public would need to start paying for a nature they otherwise regarded as having a right to access freely, or that funding for the environment could be jeopardised and placed in the hands of private interests. More generally thinking about the environment in terms of 'services provided' appeared one dimensional in terms of human relationships with nature. People should not simply be seen as consuming ecosystem services, but in a reciprocal relationship with the natural world. Policy makers and scientists should ensure the idea of ecosystem services is tempered with recognition of responsibilities and duties of care towards the environment. Purely at a linguistic level, this may include recalibrating some of the language of the framework to capture a less instrumental framing of guiding concerns: for example ecosystem services as ecosystem 'gifts' and 'privileges'; or payments for ecosystem services as 'investments in ecosystem services'.

As participants explored how ecosystem services thinking is being embedded into practice, they saw many virtues in specifically taking the Ecosystem Approach to decision making. There was strong endorsement of its principles and a close correspondence between these and their own, un-primed, views of good decision making with respect to ecosystem services. Participants offered a range of critical and imaginative suggestions for taking this agenda forward (Table 8.1). Yet participants were under few illusions about the process of translating NEA style thinking into practice. In both, general and specific ways, participants suggested that the approach operates within, and somewhat reinforces, a voluntaristic world where commitments are too optional and where adoption of the approach potentially relies too much on cajoling indifferent or uninformed stakeholders such as businesses that do not really care about long term environmental processes; elected members of local councils with no training in environmental issues; and government departments with priorities that do not align to environmental goals.

Some participants were cynical that while the approach seemed designed to work beyond and outside of normal political cycles, implementation would be hampered by short term political interests. They were concerned that progress could not be sustained or guaranteed over the long term in a world of piecemeal, project-based, funding. Monitoring would tail off, outcomes would be jeopardised and the approach would create a generation of disillusioned volunteers. Some expressed concern that applications of the Ecosystem Approach might create congested and confusing stakeholder processes. They worried that the

Table 8.1 Taking the agenda forward: What might a good future look like?

KNOWLEDGE AND GOVERNANCE
• There is investment in long term environmental science and technology research programmes, and publicly funded institutions with core environmental competencies, operating beyond short term political cycles.
• Local knowledge and perspectives inform the complex evidence needs of the Ecosystem Approach, such as through programmes of citizen science.
• A national 'Ecosystems Agency' is set up to co-ordinate and integrate approaches and demonstrate good practice.
• Approaches that recognise and reward ecosystem service provision are being encouraged, but there are mechanisms to regulate and penalise for poor practice.
• Third sector organisations that have locally specific environmental remits (such as local wildlife and river trusts) are helping to mediate and assure local innovations.
• Influential local stakeholders on the natural environment, such as elected local officials controlling budgets, and local planners, understand and appreciate the value of sustaining ecosystem services.
COMMUNICATION AND UNDERSTANDING
• The language of ecosystem services is simplified to engage people, but not at the expense of embracing the overall complexity of an ecosystem services perspective.
• Ecosystem services thinking is branded and kite-marked so that people have an identifiable rallying point around which models of behaviour can be influenced, assuring and differentiating products.
• The media is actively used to promote awareness and understanding, such as ecosystem-based soap operas ('Salty Street') and ecosystem-informed storylines.
• The language of economy is employed to influence and raise national level consciousness about the value of ecosystems and influence powerful stakeholders, but money is not the sole currency of decision making.
CITIZENSHIP AND INVOLVEMENT
• Duties and responsibilities to nature are promoted as part of the overall logic of an ecosystem services perspective to decision making.
• Micro affiliations with place are used as a catalyst for local engagement and behaviour change (such the 'love your place' initiative).
• People are obliged and rewarded in their commitments to ecosystems, for instance through a designated 'National Volunteering Bank Holiday'.
• Technology and social media is harnessed to involve people. Apps are developed that allow people to contribute, and crowd fund, opportunities for ecosystem service delivery and monitor progress.

emphasis on partnership working around complex issues meant overall leadership and vision could be lost or obscured. Some also pointed out that examples of good practice seemed to rely on the role of charismatic and committed innovators and worried whether projects would be able to be sustained or replicated.

With certain caveats and exceptions mechanisms for delivering novel revenue streams, such as through PES, were generally welcomed, and participants saw the potential for a range of local beneficiaries to pay into schemes on the proviso that payment could be tied directly to benefits and outcomes. There was some sensitivity about these schemes in terms of their association with the market. The worry was that land managers and businesses may make money and profit from PES, and therefore be rewarded for things they should be doing anyway. There was also concern about the involvement of private actors in the way these schemes are run and administered. The use of non-commercial actors – the state and third sector – is generally welcomed in the design and implementation of PES. In all of this the need to build programmes of activity out of secure and long term forms of funding was important.

Participants were concerned that programmes of holistic research encouraged by the ecosystem approach may struggle to deal with their own complexities. They wondered how the fundamental evidence for these services can be acquired or sustained even within tightly defined

project areas, meaning that the practical reality is likely to be more partial and fragmented. An important message was that many participants support the idea of large scale publicly funded commitments to the science around these concepts, and the funding of institutions with core scientific competencies which would build knowledge toward long term goals and operate outside of political interference and commercial influence.

The use of valuation analyses to inform policy and decision making was welcomed. Participants' views on the use of valuation methods had political, ethical and tactical dimensions and were often sensitive to the scale and object of decision making. Although many participants expressed concerns about associating nature with monetary measures of value, monetary valuation techniques were considered generally important tools for communicating and thinking about values within decision making; a tactically useful thing to do in terms of making the general case for nature. The generic qualities of monetisation methodologies appealed strongly to participants. Monetary valuation evidence was generally viewed positively because it is quantitative and provides information in a tangible, logical and uniform format. They felt these qualities lent the monetary approach transparency, objectivity and clarity, even if the assumptions behind specific applications of the techniques might be questioned.

Monetary valuation was interpreted as a necessary, but not sufficient, basis for decision making. Participants generally put more conditions on valuation evidence the 'closer to home' the decision gets (more personal and proximate), and the more risks and uncertainties the decision seemed to be addressing. As such local public participation was viewed as a desirable attribute of ecosystem-based decision making with participant suggesting a variety of ways in which monetary and participatory non-monetary methods might be usefully coupled together as part of valuation processes. More generally participants made the case for strong public involvement in decision making in terms of promoting transparency and awareness about how and why decisions are made. The sense that decisions are as much social and political issues as scientific problems also came through frequently and is often translated into the need to consult and involve diverse publics. Some cited examples where ecological expertise and solutions offered by the public have been actively ignored or where capacities of publics to create and inform evidence for decisions remains unharnessed.

Networks that promote micro – place-based and community – affiliations with the environment are ranked highly as way of advancing local engagement. Cited examples were the national campaign 'Love where you live' which encourages residents to show civic pride in where they live, but also more informal, bottom-up approaches to engagement such as 'Friends of' associations. Speaking long term one group imagined a "national volunteering bank holiday" to compel people to join citizen science and ecosystem management programmes.

Yet dialogue participants hold no illusions about the challenge of translating a normative view of environmental citizenship into a practical reality, or about the capacity of these processes to make good decisions. There is a feeling that community processes are susceptible to interest capture, and that participatory processes can lack closure and direction. More generally the sheer diversity of issues considered made participants wondering whether the wider public could rally around the agenda. Some suggested that the ecosystem services agenda need to be encapsulated in a single idea or brand that could capture wider understanding and interest and drive innovation and engagement, such as creating an ecosystems 'kitemark' or 'umbrella' and embedding this within consumer practices and product quality assurance processes.

When set within the context of debates about the long term future, we found that many aspects of participants' views on ecosystems and their management chimed strongly with the NEA's overall ecosystem services philosophy. Ecosystem services and the ecosystem approach are not panaceas for heading off future risks and challenges and building sustainable futures. Yet this dialogue shows that elements of the NEA logic and its findings have resonance with public aspirations and concerns for credible policy development with respect to the natural environment.

FOLLOW UP RESOURCES

NEA, Ecosystem Services and the Ecosystem Approach

UK National Ecosystem Assessment (2011) The UK National Ecosystem Assessment, UNEP-WCMC, Cambridge. Accessible at http://uknea.unep-wcmc.org/Default.aspx

UK National Ecosystem Assessment Follow-On (2014) UNEP-WCMC, Cambridge. Accessible at http://uknea.unep-wcmc.org/Default.aspx

Wider guidance for policy and decision makers on using an ecosystems approach and valuing ecosystem services is available at https://www.gov.uk/ecosystems-services

Public Dialogue

For more information on the work of Sciencewise including projects and wider learning resources see http://www.sciencewise-erc.org.uk

What do publics make of the idea of ecosystem services? How well does this concept resonate with societal aspirations and concerns for the natural environment? What are the key opportunities and challenges in taking the Ecosystem Approach forward in policy and practice?

Drawing on the work of the National Ecosystem Assessment the 'Naturally Speaking…' public dialogue was commissioned by government to provide authoritative insight into these questions. The dialogue was delivered by the University of Exeter and run in partnership with Defra, NERC and Sciencewise, the UK's national centre for public dialogue in policy making involving science and technology issues.

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