



LNP Evaluation: Draft Thematic Discussion Paper

Natural capital: Making the economic case for investing in the natural environment

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DRAFT

Note on status of discussion paper

This discussion paper is a draft working document and will be revised following additional feedback from LNPs.

DRAFT

Natural capital: Making the economic case for investing in the natural environment

The purpose of this discussion paper is to provide some 'food for thought' on a topic stakeholders wished to discuss in more depth on the basis of the findings from the Local Nature Partnership (LNP) Phase II Evaluation to date. The evaluation is being delivered by ICF International (ICF) and our associate, Rick Minter, for the Department for Environment, Food and Rural Affairs (Defra). The aim of the evaluation is to examine the implementation and outcomes of LNPs, and support and enable LNPs to work with representatives from other partnerships and organisations to determine the potential to improve coordination between other initiatives.

This paper covers how LNPs could potentially make the economic case for investing in the natural environment.

The consultations completed by ICF during the first stage of the evaluation highlighted that LNPs are generally familiar with the concept of natural capital, but are often uncertain about how to demonstrate the potential economic benefits of investing in the environment. LNPs suggested that the evidence required to make the case for the benefits of investing in the natural environment appeared onerous and beyond the resources available to them. However LNPs recognise the need to apply a natural capital approach to engage more successfully with LEPs, who often fail to consider the contribution of the natural environment to local economies.

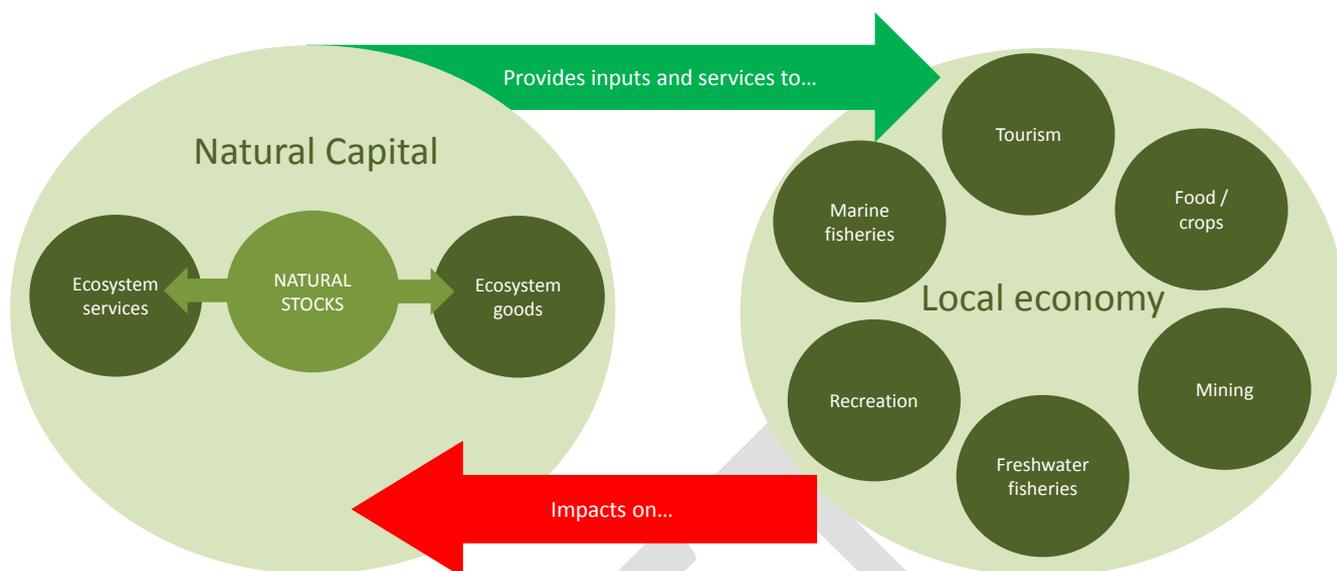
This paper includes a brief overview of the concept of natural capital, a summary of the interim findings of the LNP evaluation as they relate to natural capital, a review of specific challenges related to natural capital, and a review of examples of how LNPs that have successfully employed a natural capital approach. The paper also includes an initial response to the two issues identified by LNPs for inclusion in the thematic evaluation:

- Who to collaborate with?
- What types of evidence to use?

Policy background

Natural capital is an integrating concept, designed to convey the interdependencies between the natural environment and economic activity. This draws on concepts from the financial sector so as to establish the idea of the natural environment as a valuable 'stock' of resources to be maintained or to grow over time- in much the same way as financial capital can appreciate or depreciate in value depending on its use. Natural capital represents the stock of wealth derived from the natural economy, the benefits it provides are considered in terms of ecosystem services. Ecosystem services are the benefits derived from natural capital. Applying the financial concept, natural capital is the 'stock', and ecosystem services the 'flow' of returns derived from the stock. Investing in natural capital can provide a cost-effective solution to local challenges by protecting the source of natural environment benefits utilised by local communities and businesses (Figure 1.1).

Figure 1.1 Local economies are likely to benefit from investments in natural capital



Stewardship of the natural environment is a responsibility for society at large as much as for public and private sector organisations, particularly given the importance of local knowledge of the natural capital that supports biodiversity and ecosystem services. Moreover, measures to conserve Natural capital may result in a range of benefits to local communities as well as a society at large- **GDP from the natural heritage tourism economy is £4.5 billion, with direct employment of 119,000 people, whilst charities such as the Royal Society of Woodland Trusts and the Royal Society of Wildlife Trusts each have annual turnovers of over £30 million (GLNP, 2013).** Civil society groups have a key role in evidencing and communicating these benefits to collaborators and supporters at both the national and local scale, which can help secure ongoing political and financial support for their endeavours. Given that knowledge of ecosystem services is often rooted in local values and context, there is a need to ‘talk the language’ of policymakers - linking initiatives undertaken at the local level to wider priorities in terms of driving economic growth and employment opportunities. At the same time, these benefits may be too intangible to attract local stakeholders, so there is a need to frame these benefits in terms of direct and meaningful impacts on local communities and businesses. Engaging local businesses from an early stage within the identification of local natural capital and ecosystem services will help to promote the long-term sustainability of these initiatives. Table 1.1 sets out the different type of ecosystem services in the UK and provides examples of the goods (benefits) provided.

Table 1.1 Ecosystem services in the UK, classified according to ecosystem service

Ecosystem processes / intermediate services		Final ecosystem services (example of goods)	
Supporting services	Primary production Soil formation Nutrient cycling Water cycling	Provisioning services	Crops, livestock, fish (<i>food</i>) Trees, standing vegetation, peat, (<i>fibre, energy, carbon sequestration</i>) Water supply (<i>domestic and industrial water</i>) Wild species diversity (<i>bio-prospecting, medical plants</i>)
	Decomposition Weathering Climate regulation Pollination Disease and pest regulation Ecological interactions		Cultural services
		Regulating services	Climate regulation (<i>equitable climate</i>)

Evolutionary processes Wild species diversity	Pollination Detoxification and purification in soils, air and water (<i>pollution control</i>) Hazard regulation (<i>erosion control, flood control</i>) Noise regulation (<i>noise control</i>) Disease and pest regulation (<i>disease and pest control</i>)
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Source: UK National Ecosystem Assessment (UNEP-WCMC, 2011).

The focus of most policy activity relating to Natural capital in England has been at the national level - initiatives such as the National Ecosystem Assessment and the Natural Environment White Paper have been pivotal in underlining the contribution of a healthy natural environment to the wellbeing of society as a whole. More recently, initiatives such as the Ecosystems Market Taskforce have explicitly addressed the link between environmental investments and opportunities for the development of new goods and services that can drive economic growth, identifying areas such as catchment management and forestry where there are shared interests between different stakeholders and opportunities for the public and private sectors to work collaboratively.

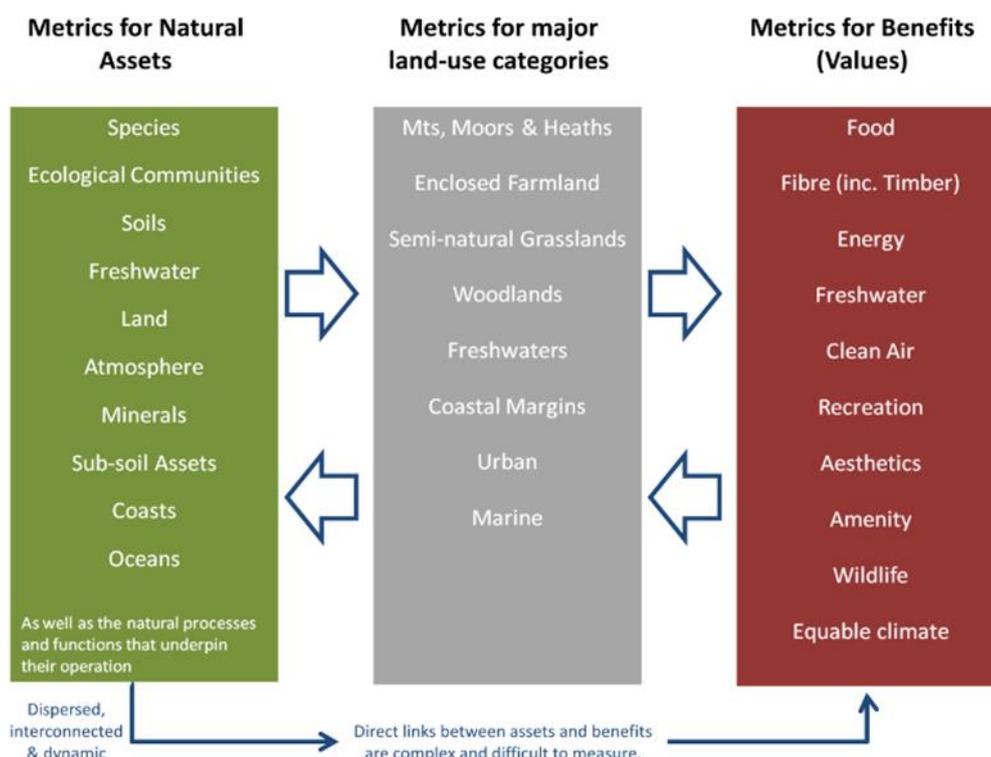
The Government's Natural Capital Committee (NCC) is the key voice for the maintenance of Natural capital as a national policy priority, and one shared across all areas of Government - including the Treasury. The outputs of NCC discussions in terms of recommendations for defining, measuring and taking steps to maintain Natural capital attract increasing attention across a range of public and private organisations at the national level, but there remains a key need to translate these recommendations into meaningful actions at the local or landscape scale.

The Government's Natural Environment White Paper (2011) established the need for a more integrated, landscape approach to management of the natural environment. Natural capital is complementary to this focus by emphasising the range of benefits provided by a common area of landscape, and incentivising a coordinated response. However, methods and support for assessing these benefits remain largely focused on specific benefits or elements of Natural capital, with relatively little support for comprehensive landscape-scale assessments. Guidance on how to integrate such 'place-based' with national scale assessments is scarce, but beginning to emerge through a handful of projects and initiatives. New institutional partnerships which can support the identification of environment-economy links include Nature Improvement Areas, as well as the Catchment-based approach, which was piloted in 2012 to involve local people and business in coordinated actions to secure multiple benefits from river catchments.

The Natural capital Committee has recognised some of the issues inherent in assessing natural capital at a local scale, and has suggested that the Broad Habitat types used within the NEA provide just one set of metrics- with value metrics and land-use categories also providing useful starting points for analysis in some cases. Nonetheless, the NCC recognises that further development and translation of this framework may be necessary at the local scale

Identifying the benefits of natural capital may involve tracing the ecosystem services flowing from a landscape feature. In other cases, it may involve stakeholders identify the benefits of the natural environment before considering the dependency of these benefits on ecosystems and natural capital. **LNPs can play a mediating role in this process**, providing a link between local economic interests (for example, ecosystem service benefits) and conservation interests (for example, species and landscape management). LNPs could also promote or help to coordinate data collection activities.

Figure 1.2 Processes for identifying Ecosystem Services



Source: Natural Capital Committee (2013)

Findings from the LNP Evaluation and Discussion Groups

The concept of natural capital aims to convey the agenda of LNPs in a way that is relevant to business and economic decision-makers. It provides a framework for defining, measuring, investing in and monitoring natural assets and their importance to the local economy over time. It is a concept that is being applied nationally and can be translated at the local level.

The interim findings of the evaluation suggest that LNPs are generally familiar with the concept of natural capital but are often uncertain about how to demonstrate the potential economic benefits of investing in the environment. During the interviews several LNP chairpersons and coordinators stated that they do not have enough resources to gather the evidence required to define the 'stock' of natural capital and the 'flow' of benefits in their local area.

Similarly, LNPs suggested that it is often expensive and laborious to demonstrate how an intervention to protect and enhance the natural environment will result in changes to the stock of natural capital or flow of natural capital-derived benefits. One problem is a lack of established methods for assessing and accounting of these benefits owing to their context-specific nature- it can be difficult to transfer knowledge and expertise from one setting to another and often in-depth consultation processes are required to establish values, contributing significantly to costs

Table 1.2 Key elements of natural capital and the potential role for LNPs

Key elements of Natural capital	Potential role for LNPs
Communicating the benefits of the natural environment in economic terminology	Focusing on tangible development priorities at the local authority level- e.g. impacts on local property prices- regeneration benefits

Key elements of Natural capital	Potential role for LNPs
Establishing the link between a landscape feature its benefits/beneficiaries	Initiating a workshop or discussion group to prompt an evaluation of the range of benefits this landscape feature brings to the community
	Mapping ecosystem service benefits against landscape features to indicate opportunities and risks
Understanding short-term and long-term risks to species and habitats	Integrating data management activities with local monitoring processes to understand specific local drivers of environmental change
Establishing compensation for efforts to maintain Natural capital	Promoting local food and products that provide income for management activities
	Providing a link between land owners/managers and environmental experts
	Providing a link to UK/EU policy, and associated funding opportunities
Evaluating impacts on natural resources and heritage arising from development	Input within planning approval processes, emphasising the opportunities of environmental investment
Understanding links between interest groups	Highlighting links between management practices and ecosystem service benefits through mapping- identifying areas for collaborative actions (eg. water, forestry, agriculture).

Participants in the thematic workshop highlighted the range of ways in which LNPs can promote the concept of natural capital:

- Use stories that are tangible and engaging.
- Use clear examples.
- Show cost-effective ways of helping business.
- Explain cost-effective ways of helping nature.
- Learn from examples (and barriers and opportunities) as more emerge.

LNPs are well-placed to play an educational, awareness-raising role around natural capital, as their membership typically bridges the public, private and charitable sectors and the specific interests and terminology of these sectors.

Main successes

Natural capital provides a common framework for addressing the links between environment and economy. However, processes for establishing these links are not standardised and draws on a combination of local knowledge and technical or expert knowledge at national scales. LNPs that have achieved successful delivery of natural capital projects have generally recognised their own limitations from the outset and played a coordinating or advisory role, together with other local partners more actively involved in consultation and data collection activities.

An iterative approach, beginning with a broad strategic overview of links between environment and economy at the local scale provides a means to engaging new partners in the collection of evidence.

Examples of success

LNP experience of engaging with assessment and valuation of natural capital is relatively limited. There are several examples of small-scale initiatives at the landscape or community level that demonstrate how LNPs may provide the role of an intermediary between local interests in the assessment stage of natural capital projects

In these examples, the role of LNPs mostly relates to communication and awareness-raising: highlighting natural capital as a common link between local interests such as resource efficiency and waste management. This communication process can also contribute to the local evidence base for natural capital, which can allow local businesses and partners to develop their own responses and strategies relating to natural capital.

Box 1 Lewes and Ouse Valley eco-nomics group

The Lewes and Ouse Valley eco-nomics group has attracted significant attention at the national level through channels such as the Valuing Nature Network and the Ecosystems Knowledge Network as a strong example of engaging local enterprise around the concept of natural capital and ecosystem services. A coordinated action financed under the local Nature Improvement Area, the focus is on a 5km area around Lewes town centre, encompassing a range of public and private landowners and groups leasing them such as the Railway and Wildlife Trust, community associations and sundry businesses of all sizes including independents and large multiples such as Tesco, Waitrose, Aldi and Pizza Express, as well as local farmers.

A workshop process has been developed that allows participants within the Lewes Community to visualise the links between human wellbeing and the local environment via provision of ecosystem services, through a range of thematic examples such as the 'Town to Down' project, the 'Valuing the Chalk' initiative and planned 'Surface to Groundwater' and 'Walk the Chalk' initiatives. Structuring these projects around a common theme or landscape focus provides benefits for awareness-raising and communication ahead of more in-depth analysis of ecosystem services within the workshop setting, and a discussion group relating to the project has been developed on the Transition Town website and other social media channels.

The project utilised funding provided through a local NIA to raise awareness among local businesses and contribute to the long-term financial sustainability of the initiative. The purpose of the awareness raising was to make the case for local businesses to promote and contribute to management of natural capital.

The stakeholder processes and criteria developed as part of the completed projects may be adapted for 'roll-out' across surrounding areas, such as South Downs National Park, Brighton, Hove and Lewes

The Local Environment and Economic Development toolkit (LEEP) is one example of how opportunities relating to the natural environment can be integrated within the early stages of new developments, incentivising close collaboration between LEPs and LNPs. The Toolkit draws upon expert knowledge from the Defra network and external consultants, and includes local knowledge via Local Commissioning Consortia. Through their coordinating role between local and national stakeholders, LNPs may play an important role in the collection of evidence about environment-economy links.

Box 2 North Yorkshire and York LNP: Linking the natural environment to an economic strategy

North Yorkshire and York (NY&Y) LNP provide a strong model of how natural capital can be integrated in a strategic manner within local agendas so as to promote engagement with LEPs and other local business interests. In particular, the LNP has opted to focus on two key areas that are of fundamental importance to the local context- small-scale economic growth and rural development- and to look for areas where these converge with a natural capital approach.

One defining aspect of the collaboration with the local LEP is that this was highly personal from the outset- since LEPs have more resources than LNPs but a broader scope, it was necessary to target 'key people' within the LEP who then acted as an advocate for the natural capital approach within the partnership. One core area where links have been built up over time is through collaboration on a £250,000 LEADER programme, focusing primarily on tourism, skills and farming (specifically, environmental outcomes and efficiency of farming and land management).

Support from local civil society groups has been important, but key success factors have been:

- A positive and proactive orientation from the start.

- Understanding LEP needs and trying to speak the same language.
- Using different 'entry points' by building relationships with LEP members.

The level of engagement (and resources required) can be tailored to the specific context and resources of the local Commissioning Group. Useful economic data are provided as outputs from each stage, which can be beneficial for securing additional support for subsequent stages. Where LEPs are less engaged in environmental issues, LNPs could lead Commissioning Groups and to draw together the existing evidence to strengthen the case for including environment in economic strategies.

Box 3 Wild Anglia (Local Environment and Economic Development Toolkit)

Wild Anglia LNP recently participated in a pilot project, together with New Anglia LEP and Norfolk and Suffolk County Councils, for an ecosystem services assessment toolkit designed to help LEPs and Local Authorities meet their economic growth targets by fully realising the role that the natural environment can play. The pilot was conducted in the context of New Anglia's Green Economy Manifesto, which considered in detail how environment can contribute to growth and how this information could be better integrated a Strategic Economic Plan, which targets creation of 80,000 additional jobs and 10,000 additional businesses by 2015.

The toolkit was developed by the Defra network (EA, Natural England and the Forestry Commission) and is designed to systematically consider the evidence relating to the local economy/environment relationship in order to reveal opportunities and threats and consider appropriate responses. The toolkit produces accessible, non-technical outputs that can assist strategic economic decision-making, feeding into a SWOT analysis. Ecosystem services are evaluated alongside more 'mainstream' economic concerns such as resource efficiency and waste management. Environmental benefits are also defined in the counterfactual, that is, the impact on the economic activity if a given ecosystem function was lost. Another benefit of the process was building understanding of beneficiaries, with the highest opportunities being associated with the development of markets for local food produce, for example.

Based on Wild Anglia's implementation of the tool, they found that it highlighted strategic and operational factors which required cooperation between local bodies (for example, investment in Green Infrastructure for flood protection benefits and a LEP-wide defence system against invasive species or diseases), and helped build good working relationships. A local Water Management Partnership Group was established as one outcome of the process, for example. Data outputs included a mind map showing relationships between opportunities and threats:

A range of local organisations can become involved in the assessment and delivery of the toolkit through a consortium approach that facilitates interaction between technical experts and a Local Commissioning Consortium.

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The tool can be tailored to the specific need, capacities and levels of engagement. There are of three levels of engagement:

- **Level 1** is expected to involve 3 days of secretariat time including a one-day workshop and will produce an initial assessment of threats and opportunities.
- **Level 2** is expected to involve 25 days and uses interviews to develop more sophisticated findings.
- **Level 3** focuses on the development of a robust evidence base to support the identification of opportunity and threats and any resulting decisions. This is expected to take 50 days work.

LEPs can start with Level 1 and then decide if there is benefit is undertaking Level 2, and then similarly for Level 3. Each level will provide outputs that can be used to inform economic planning

The Toolkit has been successfully trialled with a range of other LEPs (Worcester, Staffordshire and Cornwall/Isles of Scilly), and Defra specialist support will be offered to 6 additional piloting LEPs/LNPs.

Other notable examples include the Greater Manchester Natural capital Group (GMNCG), which has developed a more targeted approach to coordinating activities across green infrastructure, waterways and biodiversity within 7 key spatial priority areas. The Greater Manchester LNP has leveraged the position of the GMNCG within Manchester's high-profile Low Carbon Hub to build on established links and understandings between environment and economy, in much the same way as the LEEP Toolkit links ecosystem services to resource efficiency assessment to build in credibility and understanding. In this way, Natural capital accounting is seen as merely 'the next link in the chain' of existing resource efficiency and not a new undertaking.

Box 4 Valuing Surrey: Making the economic case for nature at the county level

The Valuing Surrey Project is a collaborative project between Surrey Nature Partnership and Surrey Connects at the county level, together with Bioregional and the Aldersgate Group, with a focus on assessing and valuing Surrey's natural capital. The decision was taken to examine natural capital, as opposed to ecosystem services, since the project's focus is on communicating the existing value of Surrey's landscape as a means to influence decisions.

The project consists of three phases: the first phase, a **gap analysis** of existing work at local, national, and international levels, considered strategically what an assessment of natural capital at this level would need to achieve. This process was crucially aided by **communication pieces** that frame the concept of natural capital to different audiences, sometimes drawing on storytelling approaches.

The second phase (currently in progress) focuses on the development of a series of scenarios for the management of natural capital at the county level, focusing on areas of risk and opportunity. The final phase will explore the active dissemination of the methodology and evidence gathered within decision-making by a range of different organisations across Surrey, as well as dissemination of results at the World Forum on Natural Capital in November 2014. This framework is intended to address concerns of scale with practical communication by linking the collection of data and discussion of the natural capital concept to local areas and economic concerns, whilst raising awareness of the importance of the natural environment to new audiences. The process of tailoring It is hoped that this could provide a model for LEP-LNP partnership working to other regions.

Main challenges

Interviews with LNP representatives indicates that the main challenge for engagement with Natural capital projects lies in achieving 'buy-in' from LEPs with a clear strategic view of economic opportunities and risks, so as to link these factors to environmental considerations. Disconnect of beneficiaries such as landowners from the concept of natural capital remains a major problem. Often, communication is the major challenge- whilst the concept of natural capital is intended to provide a link between environmental and economic interests, in many cases environmental investments are still perceived as a constraint, rather than opportunity, for local economic development. Addressing this perception requires the production of concrete and locally-relevant examples.

Another challenge is the general nature of these assessments and the difficulty of assessing natural capital at the local scale. Policy support and research grants tend to focus on specific elements of natural capital (for example, water, forestry, etc.) rather than supporting the landscape-level focus of LNPs. A lack of consistent standards and methodologies compounds this problem.

Since original data collection activities are impractical for LNPs, collection of evidence should be aligned with the specific knowledge and activities of other partners. However, establishing effective partnerships is often fraught with difficulty- complex or overlapping administrative boundaries are a common concern, as is the reluctance of certain stakeholders to provide necessary information owing to reputational concerns.

Barriers

- Natural capital is a complex concept, and often somewhat nebulous- it is a challenge to communicate. Lack of consistent standards and methodologies compounds this problems
- Many businesses still fail to see the links and dependencies between nature and business growth
- Disconnect of beneficiaries (for example, landowners) from the concept of natural capital remains a key problem- there are attitudinal barriers to overcome in this regard- people don't see why this should be monetised or compensated
- Funding and resources to undertake surveys and deliver actions is a common challenge for LNPs
- For some LNPs, complex or overlapping administrative boundaries (eg. multiple Local Authorities, LEP or LNP overlap) represent a major practical challenge for realising landscape-scale natural capital projects
- Natural capital projects require access to a range of information from stakeholders- some of which may not be forthcoming due to perceived reputational risks
- Establishing effective partnerships for delivery of natural capital projects is key but often fraught with difficulty

Opportunities

- LNPs need to focus on finding 'hooks' for natural capital- shared areas of interest that are critical for business success and can be expanded over time
- Natural capital can point to innovative financing that could offset reductions in other environmental expenditure and support Biodiversity 2020 objectives
- LNPs could be more strategic in the partners they target- for example, local businesses could be profiled on the basis of their existing sustainability credentials (awards, press coverage etc.) to ensure that sympathetic organisations are prioritised
- Thinking creatively about compensation measures (for example, payment in kind or community engagement) could highlight a wider range of possibilities than PES measures alone
- **LNPs should examine the potential for providing service contracts to public and private sector organisations-** examples such as the Peatland Code highlight the reputational benefits to the private sector for participating in such schemes. LNPs could provide advisory services to such schemes, top-slicing revenue to support their operating costs
- Often, bigger businesses have more time and resources to engage with natural capital projects. They also have additional incentives to do so, such as reputational incentives
- Natural capital projects can help identify previously unrecognised or potential benefits and point to ways in which cost savings can be achieved (for example, through managed realignment projects)
- Natural capital has significant potential to bring together diverse stakeholders and align a range of interests. LNPs should work towards multiple-benefit solutions
- Natural capital has a strong link to other important agendas such as health and wellbeing, and outdoor activity that could be capitalised on

Areas for discussion

Who to collaborate with?

Experience from successful delivery of successful natural capital projects suggests that the optimal role for LNPs is a coordination role, linking LEPs and Local Authorities to sources of environmental information at the local and national levels through established networks. Doing so should help to provide a strategic overview of local environment-economy links. Once the evidence base has been gathered, more ad-hoc forms of partnership delivery may emerge to focus on the maintenance of specific benefits or elements of natural capital. LNPs need to focus on finding 'hooks' for natural capital- shared areas of interest that are critical for business success and can be expanded over time.

Most existing natural capital assessments have benefited from a LEP with a clear interest in identifying environment-economy linkages, or another consortium linked to a clear source of financing such as a Nature Improvement Area. By contrast, many LNPs report a limited engagement with environmental issues amongst LEPs, as well as difficulties in LEP-LNP working which may be rooted in the perceived lack of credibility arising from the unfunded status of most LNPs.

LNPs need to think creatively and strategically about the type of organisations and projects that could contribute to better understanding of environment and economy links.

Most LNPs do not have resources to undertake original analysis of these links, so these activities should be integrated within existing projects wherever possible. Local research institutions and universities are a natural starting point for collaboration, given the knowledge-intensive nature of natural capital and the links of these institutions to established grant and funding sources: partnering on a local natural capital assessment study could provide opportunities to apply for research funding. Crucially, LNPs can prioritise funding from small-scale, project-level investments towards landscape-level investments, realising efficiencies of scale.

Local businesses could be profiled on the basis of their existing sustainability credentials (to ensure that sympathetic organisations are targeted). Often, bigger businesses have more time, resources and reputational incentives to engage with the natural capital agenda. Similarly, thinking beyond Payments for Ecosystem Services (PES) schemes to other forms of compensation, such as payment in kind or community engagement could open up a wider range of possibilities.

Participants in the thematic workshop indicated that LNPs should examine the potential for providing service contracts to public and private sector organisations- citing examples such as the Peatland Code where the private sector has a clear reputational basis for participation. LNPs would provide advisory services under such a model, top-slicing revenue to support their operating costs.

National-level pilot projects, such as the LEED pilots, or monitoring programmes facilitated at the national level by the Defra network, are also a good starting point for evidence as well as specific support for local data collection activities. However, these programmes are often targeted at specific elements or benefits of natural capital rather than providing support to local-scale assessment. One promising area of collaboration is the Environment Agency's Catchment Partnerships (see below). Thinking creatively about 'blue-green' links can help identify shared areas of interest between groups such as farmers and water utilities, but it can also point to new funding opportunities and consortia- Dean Park Nature Improvement Area, for example, recently secured £2.1m of support from the Catchment Restoration Fund for water quality improvements.

Engagement with organisations that have a proven track record of recognising and communicating nature's benefits at a landscape scale, such as Areas of Outstanding Natural Beauty, are natural partners in the collection of this evidence base and communication of natural capital. Such organisations may also help to support the credibility of projects.

Box 5 Environment Agency- Catchment Restoration Fund and Catchment Pilots

One area of clear convergence between the work of LNPs and natural capital is in protection of freshwater resources. The EU Water Framework Directive (WFD) is the policy driver in this regard, and requires national governments to outline plans for achieving good qualitative and quantitative status of water bodies by 2015. In response to this increased understanding of the potential benefits of participatory catchment planning, undertaken with local stakeholders and knowledge providers, in 2011 Defra announced that the UK Government was committed to adopting a more 'catchment-based approach' to sharing information, working together and coordinating efforts to protect England's water environment.

In response to the success of their initial Pilot Catchments, DEFRA announced their policy framework for the roll-out of the Catchment-Based Approach (CaBA) to all of the ~80 catchments in England, with catchment hosts selected in autumn 2013. Participants in the LNP discussion groups highlighted the proven track record of Catchment Partnerships in mobilising resources and funding towards environmental projects in some areas. The Catchment Restoration Fund was also highlighted as an important source of financial support underpinning these efforts.

The outputs of the DEFRA Catchment Pilot Projects are presented on the Catchment Change Management Hub website (ccmhub.net) and reveal that the new partnerships created in many catchments were able to generate ambitious and comprehensive plans for the improvement of river ecological health and water quality.

What types of evidence to use?

It is important to consider the weight given to monetary evidence within most policy decisions at the national and local levels. However, not all data are amenable to monetisation and other types of quantifiable benefits are important to decision-makers, particularly at a local scale. Quantifying ecosystem services and their associated economic values is useful to communicate local-scale activities to national policymakers, but literacy around these issues often is often basic (at best) amongst local decision-makers, who may be more amenable to a general understanding of the links between environment and economic activity at the local level so as to target monitoring and resources more effectively.

Box 6 Valuing natural capital- a typology of methods

There are a range of means to assess and communicate the value of natural capital.

Market price measures use the market price of a traded product as indicative of the economic value of ecosystem goods or services.

Productivity approaches measure the contribution of natural capital to the production of a commercially-traded good (for example, drinking water).

Replacement cost methods estimate the hypothetical cost of replacing the services provided by an ecosystem if it were not available- for example, the cost of replacing pollination services provided by bees.

Damage cost or avoided cost methods similarly estimate (usually through secondary data) the costs of damage to physical infrastructure or management costs that would be incurred if a given element of natural capital were not in place.

Stated preference methods usually take the form of surveys asking respondents to make hypothetical choices between alternative environmental conditions and associated management costs (for example, in tax contributions). Based on the trade-offs respondents make, an implicit willingness-to-pay for the conservation of key elements of natural capital can be calculated.

Hedonic price methods measure the economic values of ecosystems that influence market prices of some other good- usually measures such as house prices

A more comprehensive overview is provided by Ecosystem Valuation:

<http://www.ecosystemvaluation.org>

The LEED Toolkit emphasises the possibility of framing natural capital in broad, strategic terms that can be closely aligned with existing terminology and priorities for economic decision-makers (parameters such as opportunities and threats, opportunities for market development, etc.). Considering benefits in these general terms can strengthen the understanding and accessibility of natural capital concepts to a wider range of decision-makers, and reflects differing priorities at the local and national scales. This broader approach points to the potential to strengthen existing partnerships, and develop new partnerships, around the concept of natural capital.

National-scale data can be a useful starting point for discussion and communication about natural capital as it often includes extensive regionally-relevant data relating to economic benefits of nature that can be tailored and communicated in line with specific local conditions.

Box 7 Local house and property prices- a driver for environmental investment?

Many of the difficulties of translating the natural capital approach to the local scale lie in the abstract nature of the concept, as well as an ingrained perception amongst many local decision-makers that environmental protection can only act as a drag on economic growth and employment.

One of the most convincing means to address this perception at a local level is evidencing the link between local environmental improvement and people's 'willingness to pay' for houses, or to invest in local businesses: this link is acknowledged implicitly by most developers and planners, resulting in small-scale landscaping and greening activities around developments, but there is a growing body of evidence addressing this link explicitly by 'stripping out' the added expenditure on property occurring as a result of proximity to green space; this added value is then seen to reflect people's willingness to pay for the range of benefits this green space provides to them.

It follows that if we begin by evidencing the direct relationship between the local environment and property prices in monetary terms (for example, drawing on national data) we can begin to untangle some of the specific benefits of the environment that people value (for example, through interviews or discussion groups) and use this information to target investment in the environment so as to maximise the direct impact on house and property values.

The Micro-economic Benefits of Investing in the Environment report (Natural England, 2014) report provides the following logic chain for this relationship:

- A. People value proximity to, and views of green space
- B. Properties with these attributes attract a price premium
- C. Improvement to green space or addition of new areas will increase property prices

It is important to consider that these benefits relate to relative, and not absolute, benefit to house and property prices. Nonetheless, such benefits may be welcomed by local authorities as a source of possible increases to the tax base and an indicator of relative economic performance- the value of such evidence for communicating the concept of Natural capital may be considerable.

Many local activities relating to natural capital have begun with a stakeholder workshop, or discussion group. However, this may be difficult given the lack of dedicated financial resources for LNPs, especially where goodwill from local organisations to participate voluntarily in discussions is not forthcoming.

Mapping broad links between landscape features, benefits and other economic activities is a relatively inexpensive activity, and can be developed over time as capacities and data improve. This can be a useful exercise for engaging new partners and identifying shared

interests around environmental management activities- as the example of the LEED Toolkit underlines. The focus at this stage is less on detailed understanding of ecological processes and species dynamics, but on the shared dependencies between different aspects of the local environment and economic activity. The Lewes and Ouse Valley example points to how this process can be undertaken iteratively, drawing in local businesses interests.

At the same time, there is a wealth of existing valuation evidence at the national level (including the National Ecosystem Assessment) and LNPs can play a key role in communicating and adapting this evidence in a manner that is locally relevant. For example, Natural capital can be used as a framework for engaging with local property developers and local authorities around the idea of improving environmental amenities, beyond statutory requirements.

For cases where more robust economic data is needed, the application of secondary data to the local context through environmental value transfer can be beneficial, although benefits that accrue at national and global scales (for example, carbon sequestration) are often significantly more simple and reliable to transfer than values that concern local decision-makers, such as health improvement and access to cultural or historical resources. In many cases it may be more desirable to source basic information on these benefits locally (with a high degree of confidence) than to transfer more precise data from elsewhere (where there will be a lower degree of confidence in this information). Credibility of evidence is paramount within considerations of environment-economy links.

Explaining natural capital and the need to invest in nature can be conveyed through different narratives, depending on the audience. Economic terms and language will suit certain situations, whilst plain English will be preferable for non-specialist audiences. For example, 'the things which nature provides for free' (buffering floodwater, outdoor experiences, pollination) is a simpler way of explaining natural capital than more scientific terms and categories of ecosystem services.

Information sources

Although there is a rapidly-expanding body of literature relating to the assessment and valuation of natural capital, utilising this information in a targeted and effective manner can be a challenge. There is a need to consider measurable and generalizable benefits of the environment (such as carbon sequestration) alongside more context-specific, locally-important values of the natural environment.

Potentially useful information sources are listed below:

- Micro-Economic Benefits of Investing in the Environment (2014) is a recent literature review published by Natural England, assessing the small-scale economic impacts of Green Infrastructure interventions. The study is structured using the Ecosystems Approach and is specifically designed to demonstrate the economic case for investment in the natural environment to Local Enterprise Partnerships and Local Authorities. The study provides a range of illustrative case studies to this end, ensuring the accessibility of data and terminology to a range of stakeholders.

<http://publications.naturalengland.org.uk/publication/32031>

- UK National Ecosystem Assessment (UNEP-WCMC, 2011) draws on many years of published studies relating to assessment and valuation of ecosystem services and combines these with ecological data from the Countryside Survey (2010). As such, values are defined as they occur within the 'Broad Habitat Types' utilised by the CS. The NEA provides a valuable starting point for assessment of ecosystem services at the landscape scale, particularly for well-established benefits such as carbon sequestration. These data can be augmented by local data

<http://uknea.unep-wcmc.org/>

- The TEEB for Local and Regional Policy Makers (2012) and TEEB for Business and Enterprise (2012) are two useful sources of guidance on how to source relevant and reliable information on the links between environmental trends and economy, and carry substantial weight with policy-makers. The classification of ecosystem services provided by the TEEB is the most widely-used internationally, and so can be thought of as something of a recognised 'standard' for assessing these benefits.

<http://www.teebweb.org/publication/teeb-for-local-and-regional-policy-makers-2/>

- The Green Infrastructure Valuation Toolkit (Natural Economy Northwest, 2008) has been developed for specific assessment of environmental benefits within a context of urban and regional planning.

<http://www.greeninfrastructurenw.co.uk>

Barriers and Opportunities to the Use of Payments for Ecosystem Services (URS, 2011) provides a good overview of some of the issues inherent in assessing ecosystem services at a landscape scale, as well as guidance on how to address some of the institutional and communication barriers to facilitating PES.

[http://randd.defra.gov.uk/Document.aspx?Document=PESFinalReport28September2011\(FINAL\).pdf](http://randd.defra.gov.uk/Document.aspx?Document=PESFinalReport28September2011(FINAL).pdf)

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