

Workshop on Cultural Ecosystem Services Indicators, Exeter 2nd July 2013

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Background

In contrast to Indicators for other Ecosystem Services, relatively little work has been conducted to identify robust, useful and practical indicators for Cultural Ecosystem Services (CES) (Hernández-Morcillo *et al.*, 2013). The UK National Ecosystem Assessment Follow-on (NEAFO) report, currently at an early draft stage, addresses this by outlining some of the issues and the data available for calculating CES indicators and by producing a set of candidate indicators for the UK. However, the work so far undertaken is intended as a ‘first stab’ at an indicator set, and the intention is to use it as a spring-board towards deriving a more definitive set. A particular focus was the identification of indicators that could capture the notion of ‘environmental settings’ as developed in the initial work for the NEA (Church *et al.* 2011). To complement and extend this thinking we also looked at metrics that could be used to assess people’s access to settings and the kinds of activities that they engage in whilst visiting these places. Stakeholder feedback is a crucial component of this process. With this in mind, on day 2 of the Cultural Ecosystem Services (CES) meeting in Exeter, 1-2 July 2013, a workshop was held to identify a set of CES indicators. The aim was to elicit suggestions for additional indicators to those in the NEA Follow-on draft, for incorporation into the final report.

Methods

The session was introduced by a short presentation outlining some of the issues which needed to be considered in the development of indicators of CES, and illustrated by the work which had been conducted for the NEA WP4 report (see “Developing indicators for cultural ecosystem services and links to biodiversity” at: <http://ekn.defra.gov.uk/about/events/past/cultural-ecosystem-services/>).

Delegates were split into 10 groups with each assigned one of 8 types of indicators to discuss. These topics were as follows:

1. *Access to environmental settings (such as parks, nature reserves, the countryside and coast)*
2. *Access to and connection with nature (such as watching wildlife)*
3. *Quality of local environment (around people’s homes and neighbourhoods)*

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4. *Engagement and participation (such as volunteering)*
5. *Demand / satisfaction (the degree to which people wished to have access to CES and how satisfied they were with its availability to them)*
6. *Connection with local culture (for example nature related festivals or connections to the cultural history of a place)*
7. *Indicators for specific sectors of the population (for example, elderly, children and deprived communities)*
8. *Monetary value of CES (revenue generated or value expressed in monetary terms)*

For each topic, example indicators were given as guidance (see Appendix A). In a question and answer session, it was noted that role of CES as an inspiration or subject for arts and crafts was not addressed. As two of the topics (2 and 6 above) had two workgroups assigned to them, this was given as an option for the 'extra' groups, but this was not taken up.

Delegates were asked to spend approximately an hour to choose indicators for their chosen topic, and to fill out for each indicator to fill out a template with the following types of information:

- Who would use the indicator? (e.g. local govt. planners/ reserve managers)
- What is the purpose of the indicator? (e.g. setting policy/ targeting/ evidence base)
- What is the geographical unit? (e.g. local district/ region/ ward/ LSOA/ Landscape)
- Is the indicator for local use/ national benchmarking/ national level monitoring?
- How do we assess quality? ((e.g. size of location/ biodiversity/ noise/ safety/ facilities)
- How do we acquire the data? (e.g. questionnaires/ GIS/ satellite imagery/ workshops)
- Are existing data sources available?
- Is the Indicator restricted to particular locations (e.g. urban/ rural, national parks)?

Instructions given to each group are given in Appendix B and template entries for each group are shown in the Appendix C.

Each group was also asked to choose two indicators to present back at a plenary session. The 'Ideal World' choice would be the indicator the group believed would provide the most useful data, irrespective of the costs involved in producing it, although delegates were informed that it should not be impossible to produce the indicator. The group were informed that an example of an 'Ideal World' indicator would be a new question added to the next national census. The 'Practical Choice' would be an indicator that could be calculated reasonably easily with currently available data, or one for which new data acquisition was foreseeable within the current resource/ budgetary environment.

Feedback was as follows.

1. Access to environmental settings

The 'Ideal World' indicator chosen by this group was a 'broad brush' survey of the entire UK population and their access to local green space. The 'Practical Indicator' was the same type of survey, but conducted at a parish level and according to local needs and resources. The group thought it was important also to consider the quality of sites, as well as local distinctiveness and variability. Alternatively, information could be limited to surveys of visitors at key sites, but it was acknowledged that this might be too restrictive.

Another indicator put forward by the group was that of 'conceptual' access – consumption of CES through media and information, for example through magazine sales, and segmented nationally according to the subject area of the media.

2. Access to and connection with nature

Two groups addressed this indicator.

The first group's 'Ideal World' indicator was for 'emotional connection and response to nature'. Ideas on how to measure this included using data from 'Google glasses'² and techniques for measuring Psychological and Physiological responses.

Their practical indicator involved measuring sales of wildlife related products such as food for birds and other wildlife, or RSPB retail sales. They also thought it would be worthwhile to measure connection with nature through media such as television.

Other indicators suggested by this group included i) local social media searches, ii) membership of local groups (National Trust, Scouts, RSPB etc.) and the number of products utilising local features, species or habitats.

The second group's 'Ideal World' indicator was a measure of what kind of places people were visiting, and for how often, calculated using data on mobile phone locations. Their practical indicator was data on the importance of nature and green space at a community level (parish/ town), acquired through the use of questionnaires.

They also thought it would be worthwhile to measure consumption of wildlife related media, through data on consumption of nature programmes, nature related books (book sales , downloads and library loans) and through monitoring of search engine key words.

3. Quality of local environment

This groups 'Ideal World' indicator involved measuring the relationship between human well-being and the characteristics of the local environment at a neighbourhood level. This would involve the development of methods to assess well-being.

² Wearable (as glasses) computers currently being developed by Google, with the ability to capture video and photographs and which can interact with the Internet via natural language voice commands.

The group's 'Practical Indicator' was a measurement of the biodiversity of private gardens, possibly using data from BTO's Big Garden Bird Watch. A survey based measurement of human practices in relation to private gardens was also suggested. It is worth noting here that the NEA Follow-on addresses the use domestic gardens as an environmental setting providing CES, and this indicator therefore has the potential to complement this work.

4. Engagement and participation

This group's 'Ideal World' indicator involved measurement of the number of times people were engaging with nature over a set time period, using both qualitative and quantitative data, and possibly based on an extension of the existing MENE data set, with additional questions and representative samples at a local level, or other survey methods such as phone or online questionnaires.

Their practical indicator would be a count of the number of people who have demonstrated engagement with nature via social media such as Facebook, Flickr, Twitter or Youtube.

It should be noted that both these indicators can be seen as proxies for demand for CES amongst a given population, as opposed to characterising the CES supplied by settings.

5. Demand / satisfaction

This group divided their indicators according to whether they measured demand or satisfaction.

On the demand side, they suggested a measure of the percentage of the population who had a preference for particular types of setting, through a household survey using three questions already part of the Welsh Outdoor Recreation Survey:

- i) Would you like to visit the outdoors more often
- ii) If yes:
 - a. a) What activities would you like to do more?
 - b. b) Which types of places would you like to visit more often?

Possible additional demand indicators included measurement of demand for wild game fishing, using information from fishery managers, the Environment Agency, and River Trusts, as well as fish and invertebrate surveys.

The group's 'Ideal World' satisfaction indicator was data from a site based questionnaire asking "does the experience meet or exceed your expectations". For their practical indicator they suggested using cross tabulations between health and wellbeing and local environment information in currently available ONS data.

Other satisfaction measures suggested included measuring the quality of cities through metrics such as Trees/ Green Spaces per capita, air quality, temperatures, real estate values and aesthetic appeal.

6. Connection with local culture

Two groups addressed this indicator.

The first group's 'Practical Indicator' was a count of the percentage of people who engaged with or visited a natural environment in their local area, acquired from the MENE data set, and supplemented by a targeted questionnaire asking about the quality of, and satisfaction with, the experience.

Their 'Ideal World' indicator was 'the percentage of people recognising the presence of a local species which was important to them', through the use of a new question in the next national census.

The second group did not specify 'Ideal World' or 'Practical indicators'. They suggested using Multi-Criteria Analysis of setting-specific cultural events (e.g. Glastonbury). Metrics would include attendance levels and Gross Value Added (GVA), as well as the diversity of events. They also suggested measuring setting-specific "cultural consumption", event-specific surveys (including estimation of GVA) and local service surveys.

7. Indicators for specific sectors of population

This group did not specify 'Ideal World' or 'Practical indicators'. They suggested two indicators, both related to access to green space. The first indicator was the percentage of care homes which provided access to green space for their residents. The second indicator was the percentage of primary schools delivering the green flag program to their pupils.

8. Monetary value of CES

This group, having considered a number of options, suggested a single indicator – the financial value of agri-environment schemes. Possible alternatives involved estimated incomes on the basis of visitor numbers, as well as incomes connected with nature reserves and wildlife-based businesses. Options considered but rejected included Heritage Lottery Fund spend, jobs created through volunteering, value of memberships of nature-related groups and value of fishing and gun licenses.

The group noted that whatever can be done at a project level to put financial values on the Natural Environment should be encouraged.

Discussion and next steps

A feature of this exercise was the range and diversity of the indicators suggested. Clearly a single indicator will not capture completely CES in their entirety, and different indicators will be needed according to the services measured, the use of the indicator and the degree to which it will be needed at a local or national level.

Another feature was the degree to which several of the indicators were intended to measure demand for or use of information and products which were not linked to specific environmental settings. It was particularly interesting that some of the groups suggested using information from media such as television and social media. Whilst many of these suggestions might be impractical (for example, data governance or commercial considerations might rule out the use of information on sales, downloads and internet use) and furthermore many of them ignore those people without

access to the media in question, they do emphasise the that CES are not always addressed within the context of environmental settings and that delegates felt that this may need to be measured in some way. This comment also applies to some of the other metrics suggested, such as sales of wild-life related products, which, although they might be used within settings (e.g. private gardens) could not be directly linked to specific natural spaces.

Relatively few of the indicators were described in precise terms. Whilst this might be expected given the time constraints (a one hour exercise), it emphasised the difficulty in arriving at a single well specified indicator which was both useful and practical to calculate. It also suggested that further work should be conducted to take the suggestions from the workshop and turn them into precisely formulated indicators for further feedback.

This workshop resulted in a number of interesting and potentially fruitful ideas for CES indicators, and this information will be taken account of in the review process for the NEA Follow-on report. It is hoped that this may form the basis for the development of a CES indicator set for the U.K. However, this process is at an early stage of development, and, as shown by many of the discussions at the workshop, a variety of views need to be taken into account, and more work needs to be done to assess the practicality and potential applications of CES indicators.

References

Church, A., Burgess, J., Ravenscroft, N., Bird, W., Blackstock, K., Brady, E., Crang, M., Fish, R., Gruffudd, P., Mourato, S., Pretty, J., Tolia-Kelly, D., Turner, K. and M. Winter (2011): Cultural Services. In: *The UK National Ecosystem Assessment Technical Report. UK National Ecosystem Assessment, UNEP-WCMC, Cambridge*, 633-692.

Hernández-Morcillo, M., Plieninger, T. and C. Bieling (2013): An empirical review of cultural ecosystem service indicators. *Ecological Indicators* 29: 434-444.

Appendix A: example indicators supplied to the work groups

Indicators – access to environmental settings

- % cover of open access land/ woodland/ farmland/ nature reserves
- % cover of woodland/ farmland accessible by road/footpath
- % of population within X m walking/driving/public transport distance of public green space/ accessible woodland/ nature reserve
- Average (per household) driving distance to the coast/ nature reserve/ national park

Indicators – access to and connection with nature

- % cover of nature/RSPB reserves, SSSI, SPA etc/ ancient woodland
- % of population within X m walking/driving/public transport distance of public green space/ accessible woodland/ nature reserve
- Number fishing rod licences held
- Number/ abundance of BAP species recorded

Indicators - quality of local environment

- % green space in area/ within X metre radius
- % of streets lined with trees
- % of households with access to a garden
- % tree cover

Indicators – engagement and participation

- Membership of RSPB/ National Trust/ Woodland Trust etc.
- Volunteer hours per capita with BTCV/ Woodland Trust etc.
- Visitor rates to country parks/ National Trust sites/ nature reserves
- % of people who practice gardening for wildlife

Indicators – demand / satisfaction

- Number of times per month per capita that residents visit their local park/ nature reserve
- Number of times per year per capita that residents visit the coast/ national park
- Average score (Likert scale) for “I am satisfied with the opportunities I get to be amongst nature”
- Average score (Likert scale) for “Connecting with nature is important to me”

Indicators - connection with local culture

- % of people who feel there is a strong connection between their community identity and the character of the landscape
- % of people who visit natural areas to meet with friends/ family
- Number of “natural” sites identified as having a strong connection to local culture
- Number of local festivals/ events associated with the natural environment/ nature

Indicators for specific sectors of population e.g. children/ elderly/ disabled/deprivation/ inequality

- % of children/ over 65s within 500 m of a public green space
- % of public green spaces accessible by wheelchair
- % of schools with a green play area adjacent to the school
- Ratio between the proportion of the most deprived fifth of the population within 500 m walking distance of a public green space and the proportion of the least deprived fifth.

Indicators - monetary Value of CES

- Estimated total revenue from nature related/ eco- tourism plus rod/hunting licences
- Revenue generated from farm based holidays
- Estimated negative/positive impact on house-prices due to good/ poor natural environment
- Estimated obesity/mental health savings/costs for NHS due to good/ poor natural environment

Appendix B – Instructions for CES workshop on Indicators

- A. Each group should fill out their **template** for at least 5 indicators:
1. Please write the group name for your table under group (e.g. “Access to Environmental Settings”)
 2. For each row of the template table – please write a brief description of the name of the indicator you have chosen e.g. “% of children within 500m of a public green space”. Write this in the “Indicator Column”
Please feel free to choose one of the example indicators for your group, or create new ones
 3. Each new row can contain information on completely different indicators or modified versions of indicators which you have already evaluated.
 4. Please fill out each column of the template as follows:
 - a. Template Column: **Indicator**
Brief description of the indicator
 - b. Template Column: **Who would use this?**
Please write who you think would be the sort of people who would find the indicator useful in their work
 - c. Template Column: **For what purpose?**
Please write how you think the indicator would be useful in practice
 - d. Template Column: **Geography?**
At what level of spatial aggregation would the indicator be calculated – Local Authority District
 - e. Template Column: **For local use/ national benchmarking/ national level monitoring?**
Please write whether you think the indicator would be used more at a local level or national level.
 - f. Template Column: **How to access quality?**
Please write if you think the indicator should incorporate an indicator of quality of a CES e.g. quietness of a green space
 - g. Template Column: **How to get data?**
How would we acquire these data – e.g. through a questionnaire
 - h. **Existing Data Sources?**
Are existing secondary data sources available which we could use to calculate these indicators
 - i. **Restricted to particular locations?**
Would the indicator only be useful in certain locations – e.g. urban areas
- B. Each group should choose **two** indicators to present at plenary. **One indicator** should be “an ideal world” indicator – the indicator which you would find most useful if resources were available to produce it. **The other indicator** should be the most useful indicator which could be readily produced without the allocation of considerable extra resources for this purpose (or you can propose two indicators which match both criteria).

Appendix C. Templates filled out by groups

Group: 1. Access to environmental settings								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Broad brush survey of all UK population and their access (diff kinds) to local greenspace (IDEAL).								
Localised, Specific, parish-based survey of access (diff kinds) to local greenspace (PRACTICAL)								
	Notes: Connections: Ideally use similar methodology for both – location action / possible project-specific <ul style="list-style-type: none"> • Need to consider QUALITY of the environmental setting. This is subjective • Can include qualitative info as well as quantitative – but local variability/ distinctiveness is important • There are many kinds of access! Which are we considering? • An alternative is survey of visitors to key sites – but this could be too restricted 							

Group: 1. Access to environmental settings								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Conceptual Access Sales of countryside magazines (classifications of these magazines)	National level Government Agencies NGOs	Monitoring environmental engagement	National BUT can distinguish different segments of market	Benchmarking of cultural focus on countryside	Could describe the character of each publication	From marketing people	Probably	No
	Notes:							

Group: 2. Access to and connection with nature. Practical								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
1. Sales of wildlife related products, i.e. food not books and boxes.	Retail, RSPB etc.	Shows interaction with, contribution to, stewardship of and importance of birds in population	Any scale	All	Type of product, quality type of birds attracted	Retail sales Qualitative stuff (choice, reasoning) Garden bird surveys to provide context Where do people buy	Sales etc. Retrospective	No but results should compare urban or rural
2. People's connection to nature through virtual media (TV)	All of us to inform strategy and delivery	Strategy and delivery					TV sales and access to: Web Social Media (following Chris Packham E-petitions, DVD sales)	Not restricted
<p>Notes: Problems with 1. A) economic dynamics; b) depreciation; c) [illegible word]</p> <p>Re 2. How significant is this to you? Relationship ration to real visits – we do not want to stop 'real access' Does this translate to real intention e.g. e-petition Supplementary or complementary Inclusive to all sectors Risk: People loose connection- only one [illegible]</p>								

Group:2 Access to and connection with nature.								
Indicator IDEAL WORLD	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Emotional connection and response to nature	Health Sector NGOs Charities Marketing	Influencing decision makers to protect access to nature at range of scales	Range of scales	Range of scales	Level of understanding from interaction	Google glasses! Physiological and Psychological response measurement	None!	No
	Notes:							

Group:3 Quality of Local Environment. Practical								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
1. Bird counts in domestic gardens or measure of biodiversity	Organisations who want to understand the biodiversity of gardens and human interactions with nature. Voluntary Sector, RSPB, RHS, and local authorities. Media – TV, magazines	Assist with urban planning for housing developments. Encouraging bird conservation and gardening practices that support biodiversity.	Postcode then aggregate to other scales	National and local if cell sizes allow	Biodiversity measured by bird counts	Using existing data to assess feasibility and what further data would be collected	Big Garden Bird Watch Almost 600,000 gardens. Data for occurrence. Not used in ?Societal? See what insight gives on practice and quality of gardens [illegibleword]	Scales of analysis will need to be explored using the data. From Big Garden Bird Survey
2. Human practices in relation to birds in domestic gardens	As above							
	Notes:							

Group: 3 Quality of Local Environment. Ideal Composite measure of the relationship between human well-being and the characteristics of the local environment								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Relationship between human well-being and the characteristics of the local environment.	All of the above plus neighbourhood organisations and local communities. Not just experts and planners.	To inform adaptive management	Local neighbourhood level	Both		Need methods to assess well being	Use MENE at national level	Restricted to existing measures of the local environment e.g. green space
	Notes:							

Group:4 Engagement and participation (most useful indicator)								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations – e.g. urban/ rural, national parks
Number of people who have demonstrated engagement or participation through social media	Local authority National Parks NGOs	GI Planning Visitor Management Membership	All of the above plus site and neighbourhood	All of the above		Facebook Twitter Flicker Youtube	NCA's	Location restrictions and demographic. No access to internet or smart phone ownership
	Notes:							

Group: 4: Engagement and Participation (Ideal World)								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Number of times of individuals engaging with nature over a period of time	Local Authority National Parks NGOs (conservation)	GI planning Visitor Management Membership	Local District Landscape Character Area	All of above	Number of species seen (cf. bird watching). Change after participation (conservation)	Super MENE* Face to Face Computer Assisted Phone Interview (Qual and quant)	National Character Area provide info. on quality	No
	<p>Notes: Super-MENE is an expanded version of MENE to gather data on specific CES indicators, particularly for use at local district level – requires building on additional questions and ensuring statistically representative samples for relevant local districts.</p>							

Group: 5. Demand/ Satisfaction								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
IDEAL: Does the experience meet or exceed your expectations	All scales	Marketing Policy makers Management Protection of sites	Landscape – Site-based Multiple scales	Both		Questionnaire	Not a universal one	No
	Notes:							

Group: 5 – Demand								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Demand: 3 Qs Would you like to visit the outdoors more? If yes: What activities would you like to do more? Which types of places would you like to visit more often?	National Government Local Government Agencies	Setting Policy Determining future interventions	National Regional (Potentially locally)	See left		Household Survey (Questionnaire)	Welsh outdoor recreation survey (possible MENE)	All locations
	Notes:							

Group: Demand / Satisfaction (Group 5) A demand indicator								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Demand for wild game fishing (salmon, sea trout, grayling)	NGOs Wild Trout Trust River Trusts Etc. PRIVATE: Fishery Managers PUBLIC: Tourism departments	Opportunities where unrealised or underexploited OR for river restoration to enhance	Native salmonid rivers (increasingly common with better WQ even in urban areas)	Multi-level	Quality of fishing experience: Remoteness Wilderness Other Wildlife Fishing returns per visit	Ask fishery managers & Environment Agency & River Trusts & River [illegible] Partnership Fish & Invertebrate Surveys	River Habitat Survey (RHS) for river suitability for game fish species	No
	Notes:							

Group: 5. Demand/ Satisfaction A satisfaction indicator								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Satisfaction of places people live: "Green cities"	City/ Unitary Planners Estate Agents Business (relocation) Natural Capital Development Politicians (re-election)	"Liveability" (multiple services"), indices of desirability, health	Urban areas (city/unitary government areas)	Local and national learning	Trees/ green spaces per capita Regulated air quality and noise Lower heat island effects "Pleasant Visuals" Real estate values	Extent of street tress (assessable via council maintenance costs) % air conditioning relative to regional norm (links to economy, regional climate, etc.)	CRAP towns index of worst cities – should be down the bottom of the list!	Cities generically
	Notes:							

Group:6 Connection with Local Culture. Multiple indicators MCA								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Cultural consumption via diversity No. events/ environmental setting No. people per event/ environmental setting Different diversity metrics e.g. Shannon- Wiener, H' For each event, no. participants and GVA	Local Govt., planners Local communities	Targeting planning	Local setting	Multi-scales		Surveys, no. tickets sold, profit per event		No, not restricted
-	Notes:							

Group:6 Connection with Local Culture.								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Level of setting-specific “Cultural Consumption”	Local gov ?	Realising asset value Therefore Setting Policy	Environmental Settings	National monitoring and local use		GVA (direct and indirect)	Event – specific surveys Local service surveys	“Setting”
	Notes:							

Group: 7 Indicators for specific sectors of population								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
% of care homes that provide opportunities to access green space	NHS Local Authorities Private Carehomes	Empirical link between green space and health and well-being	Local Authority	National and country level	Yes: Quality of experience is related to well-being	Questionnaires (Online) Care home managers and residents – interviews?	Care home register	National
% of schools providing access to Green Flag	Educational authorities	Same as above Evidence based Improve well being	Local authority	National and county level	Amount of student time allocated to the activity. Diversity of natural environment available	Questionnaires OFSTED inspection on-line	Green Flag database exists	National
	Notes:							

Group: 8 Monetary value of CES								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base)	Geography (local district/ region/ ward/ LSOA/ Landscape)	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Value of agri-environment schemes (EFF too?)	Environmental bodies	Promoting value of natural environment and encouraging investment in the Natural Environment	Probably LA district		All qualitative monitoring already included	Available on MAGIC	Available on MAGIC	No
Considered but then ignored: HLF spend Jobs created through volunteering Value of membership Fishing/ Gun licenses		Can't even get a [illegible word] angle?						
Possibilities: Visitor numbers – modelled to provide incomes (but whole load of problems) Nature Reserve Incomes (works, but doesn't include members)!! Incomes of wildlife based businesses								
Census question – doesn't work either?								
	Notes: Whatever can be done at project level to put hard values on the NE is good and should be encouraged							

Group:9 Access to and connection with nature.								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Questionnaire looking at value of nature/ space at a community level Done locally Parish/ Town basis	Planners Local authorities Those focused on greenspace/ green infrastructure	Community Quality of life – planning decisions. Baseline evidence	Local Area	Local use		Questionnaires	Compare with access data and local use data	
IDEAL – mobile phone data ~ GPS and non-GPS enabled – where people are over a period of time								
	Notes:							

Group:9 Access to and connection with nature.								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Type of engagement beyond ‘formal’ visit to somewhere. Watching nature programmes Books- downloads, library borrowing, downloads Google keywords	Academics Govt. organisations Marketeers	Evidence base	National by socio-economic status	National level monitoring		BARB Commercial companies e.g. Amazon Add to existing questionnaires e.g. MENE, ANGSt. Google data only by national – can they be refined?		
	Notes: Historic component – not just how you access/ connect now but what you did during your upbringing – that affects your choices today and your attitudes etc. Relate past experience to present responses.							

Group: 10 Connection with local culture								
Indicator	Who would use this – e.g. local govt. planners/ reserve managers	For what purpose (e.g. setting policy/ targeting/ evidence base	Geography (local district/ region/ ward/ LSOA/ Landscape	For local use/ national benchmarking/ national level monitoring	how to assess quality (e.g. size of location/ biodiversity/ noise/ safety/ facilities)	How to get data (e.g. questionnaires/ GIS/ satellite imagery/ workshops)	Existing Data Sources?	Restricted to particular locations –e.g. urban/ rural, national parks
Practical. Survey % of people who engaged/ visited with a natural environment in their local area	Local – national governing bodies and planners, policy	Shape local policy, identify gaps	Parish council – easily scaled up to District council	Local – national Used more at local level	Feedback survey - Satisfaction - Quality (supplementary qs)	MENE supplemented by targeted survey	Local surveys Organisation data	No
Ideal: % of people recognising presence of a species important to them	Broad – locally relevant; Business, tourism, LEAs, academic	Enhancing local env. Knowledge, community awareness, understanding and finding out what is important to people locally, <u>not</u> from the top down	Household level – q in census	Local	Formulation of the q – applying it to the locality	New q in census	Info from locally focused marketing Pre-existing recognisable species	No
Notes: Others 1. Local social media search e.g. presence of # twitter, Facebook, local press (word clouds) (hash tags) (GIS records) 2. Membership of local groups – how to identify and environmental interest? – NT, Scouts, TCV, RSPB, recreation groups 3. Number of local products using local features/ species/ habitats								