

The UK UNESCO Man and Biosphere (MAB) Urban Forum's Response to the Pre consultation on the Nature of England White Paper

The **UK MAB Urban Forum** (www.ukmaburbanforum.co.uk) is a network of managers, planners and researchers involved with the environment and nature conservation in urban areas. It is an independent Committee affiliated to the UK National Committee for UNESCO Man and Biosphere Programme (UKMAB).

The Urban Forum's distinctive goal is integrated thinking with the specific remit of pushing urban nature conservation up the social and political agenda. Its contribution is in raising awareness; stimulating research; influencing policy; and improving the design and management of urban systems. Members of the Urban Forum come from a wide variety of backgrounds, from ecologists to academics and journalists, from NGOs to local authorities, government agencies and private consultancies, from those primarily concerned with conserving "nature" - plants, wildlife, biodiversity - to those who work with people and deal with the human impact of green spaces.

This response represents the views of the Forum as a whole; it does not seek to represent the views of any specific individual or agency.

Question 1 – What do we need to do to embed the true value of our natural resources in decision making at all levels?

a. How can we reflect all the different kinds of value described above?

The benefits of ecosystem services are being increasingly valued by 'pockets' of the population, but there remains a general need to promote a transdisciplinary exchange of knowledge and evidence about the social and economic value of our natural resources.

Value indicators can be very useful for decision makers, but these need to be simple to apply and clear in their scope and outcomes.

Because landscapes, ecosystems and wildlife habitats always seem to be given a lower monetary value than alternative land uses (e.g. when a road or factory is proposed for location on a protected site in a deprived area), any new approach to valuing natural assets should decide what assets we need, of what quality, for what reasons, and in which locations. Once the priorities are decided then a dialogue about provision or mitigation can begin. Only at this stage can monetary factors be effectively brought into consideration, because it is only at this stage that the true costs of loss of ecosystem goods and services can be calculated. Such an approach would enable natural assets to be fairly compared with alternative land uses and should lead to both a better quality of life for people and better protection for the UK's natural resources. The Greenspace Toolkits promoted by CCW and Natural England that were developed from research done by the UK MAB Urban Forum demonstrate this approach.

The Urban Forum has created a practical example of this in the Accessible Natural Greenspace Standards, and in so doing developed the concept that green space provision

should be made upon evidence of need when assessed against a standard based upon sound science (e.g. medical science, biological science, social science etc).

Likewise the Urban Forum has begun working on a set of toolkits to enable planners and practitioners to assess the quality of local green infrastructure and reach an informed decision on strategies to increase green spaces and ecosystem services in urban areas. These address urban water management, heat island control, air pollution management, street trees and noise control. The justification underlying these tools is that of improved human public health, ecosystem health and urban nature through a well thought out green infrastructure management.

All greenspace strategies, for example, that of the Borough of Trafford in Greater Manchester, now follow the accessibility standards originally proposed by the Urban Forum. Similar standards are now required for other aspects of urban greenspace and for sites of wildlife interest generally. The Urban Forum expresses its interest in contributing to the development of the proposed White Paper by offering the advice of its expert membership.

The whole body of ideas on valuing ecosystem services (Constanza, et al., 1997)ⁱ should be used in developing the valuation of natural resources. This is particularly important for natural areas and managed greenspace within, and immediately adjacent to, urban areas. In so doing, new work should:

1. Build on technical approaches, such as *The Economics of Ecosystems and Biodiversity Study* (TEEB) (www.teebweb.org/), but don't lose sight of local views and historical significance. Use participatory planning processes in an area to map and celebrate local assets and landscape features. Currently there is a real lack of integration of the local knowledge that emerges in participatory planning processes, so that each time they are done, we are reinventing the wheel. Is it possible to include a place for local values and features to be recorded along side technical information, so that as a practitioner goes into an area, it is possible to see if any participatory planning has been carried out in the area, and can access important information about local views on ecological features and the landscape. This would build on community mapping and green mapping approaches to create a valuable addition to technical approaches to measuring and recording ecosystem value.
2. Make the information graphically visible – almost like the thermometer on the village church – both in documents and on websites and possibly in town halls. This could be linked to integrative spatial planning information provision, such as in UKGRABS (the UK part of the EU GraBS project: Green and Blue Space Adaptation for Urban Areas and Eco-towns) (www.grabs-eu.org), which pulls together information on blue (water) and green (vegetation) space and the potential and need for ecosystem approaches to climate change adaptation.

Question 2 – Have we identified the right overarching challenges for the White Paper to consider?

The challenges identified are broadly right, and once again, the use of evidence-based provision of natural assets to ameliorate or mitigate for climate change should be considered. This would enable such natural assets to be secured against both human induced incremental change (e.g. the cumulative impact of permitted developments) and other land use changes created by demographic changes. However, as evidence from the implementation of the greenspace toolkit in Wales has shown, it is most effective if evidence-based provision is undertaken as part of a process of dialogue with all stakeholders. Methodologies, which are scientifically sound, can be totally invalidated by failures in stakeholder engagement (see "A Tale of Two Cities" at <http://www.bdor.co.uk/publications.htm> for an excellent example). The implication is that as much effort should be put into stakeholder engagement in the specification, design and implementation of a course of action as is put into the scientific work of defining the problem and inventing technical solutions to it.

Furthermore a report called *The Economics of Ecosystems and Biodiversity: Ecological and Economic Foundations* is being presented at the UN summit in Nagoya (Japan) this month (October 2010). The report is the first highlighting the cash value of biodiversity; it is based on The Economics of Ecosystems and Biodiversity study (TEEB) (<http://www.teebweb.org/>) which was initiated at the 2007 G8 summit. Similarly to the Stern report, which highlighted the economics of climate change, this report aims to draw attention to the fact that most mainstream economists are 'blind' to the value of biodiversity and that conservation should be seen as an investment and not a cost. With the demographic forecast of 90% of population residing in urban areas by 2050, it seems imperative for the UK to take inspiration from the TEEB report and set out a programme, which specifically addresses the cash value of urban ecosystems and biodiversity.

a. If not, what should we focus on?

There is a deeper way to consider these challenges -

We need to fundamentally re-design our systems of consumption and production. This implies serious consideration of flows of resources, to move towards systems where we meet our needs from solar income, all technical nutrients are constantly re-used without being down-cycled in closed technical loops, and we restore and maintain resilient ecosystems. This is not a case of responding piecemeal to challenges, but a serious endeavour to redesign housing, transport, production and distribution to mimic ecological principles and to fit within natural cycles.

Cradle to cradle design, especially as practiced on a large scale in the Netherlands, offers a sound basis for this work. The role for DEFRA could be in ensuring that there is not a narrow project design focus, but also a real focus on transport and spatial planning – if resilient ecosystems are to be restored and maintained, there is a need for systemic consideration of land use and the paving over of surface area, plus fragmentation of habitats, and to adapt to climate change (Cavan et al., 2009)ⁱⁱ.

China is making great strides towards a circular economy (Yuan et al., 2006)ⁱⁱⁱ. We have a potential role to play in demonstrating a real, innovative alternative to ‘development followed by environmental clean up’, i.e. development that is inherently designed with ecological principles.

b. How should we approach these challenges?

Fiscal reform to include taxes on what we want to see less of (pollution and habitat destruction) shifted from taxes on what we want to see more of (people in work).

Taking a more integrated approach to planning, so that all local plans and strategies are carried out in such a way to build an integrated sustainable plan for areas.

Question 3 – What are the existing policies and practices aimed at protecting England’s natural assets (including but not limited to those set out above on our biodiversity, seas, water bodies, air and soil) that currently work most effectively?

a. What works less well – what could we stop doing or do differently?

Local Development Frameworks (LDFs) (or whatever they get replaced by) are key for such processes. The White Paper could benefit from an explicit statement about moving away from a preoccupation with looking back, particularly from a biodiversity point of view, to looking forward. This would imply a need to embrace change, to accept that landscapes will look different but can still be quality landscapes, distinctive and delivering goods and services for people. There is a need to look at future environments as the product of both natural events and people-induced changes. This implies a need to manage habitats and natural assets to cope with change (Hansen et al., 2001)^{iv}.

Delivering a vision in the face of the 3 big challenges (climate, demographic and chronic pressures) should not mean getting rid of the mechanisms we have, but applying them in a more creative, joined-up way and agreeing a far higher ambition than before (goals and targets). This will require making the natural environment a more significant component of core social and economic policies such as health and education.

Question 4 – What mechanisms should we focus on to ensure we manage our natural systems more effectively in future?

a. How should we define success?

Success should be defined at multiple scales, but clearly related in each instance to sustainability principles at the global level – as exemplified in The Natural Step (www.forumforthefuture.org/node/365) and the emerging RoundView (www.roundview.com) framework which recasts The Natural Step principles into a positive framing, which maintains the scientific rigour of the original work (from research at the Sustainable Consumption Institute (www.sci.manchester.ac.uk/)). Thus visions of success should both be defined locally and linked to a clear, overarching set of guidelines that provide a way to test whether or not actions are moving in a sustainable direction.

b. How can we agree on common goals and assess our progress towards them?

There is a need for integrated delivery at the local level, where social, economic and environmental factors are considered in a balanced way to achieve the optimum mix. Locally integrated plans with clear targets are vital to achieving the assessment of progress and it is local communities working together to “stack benefits” and pool resources that will help with this endeavour. There is operational evidence, which demonstrates how this can work with the development of ‘sense of place projects’. Natural Areas in England as defined in landscape character have mixed success; it may therefore be better to advocate a localism approach to develop natural units rather than ones imposed by a geological characterization.

Natural England has been clarifying objectives for each of the Landscape Character areas (e.g. East Midlands Landscape Partnership, 2010)^v but recognises that these areas do not easily read across to political/local authority boundaries. They therefore intend to translate these character area objectives to local authority areas for ease of interpretation. This approach would also work within urban areas.

Question 5 – How best can we reduce our footprint on the natural environment abroad, through the goods, services and products we use?

This will require action on at least the scale of the EU to agree legally permitted trade agreements and charges or industry standards to facilitate the import of goods that comply with EU standards on resource use and environmental protection.

Encouraging people to grow their own food will greatly reduce impacts of commercial agriculture and reduce “food-miles” and the associated energy costs. It will also bring ecosystem services to urban areas. Allotments are currently in high demand. The waiting lists to obtain the use of one of them are long: In Hackney, east London it is four to five years, in Edinburgh, Scotland, seven years and in Poole, Dorset up to 10 years (Perrone, 2009)^{vi}. Over the UK as a whole, some 100,000 people are waiting for access to an allotment. The need for more land for urban food growing has been recognised by the agencies responsible for canals and railways that have supported community network groups who wish to use vacant land adjacent to railway stations and along canals.

Inspirational work is now taking place in Todmorden, not far from Manchester, where a movement called “Incredible Edible Todmorden” aims to make the small urban community self-sufficient in vegetables by 2018. No patch of land has been left unturned, from herb planters on station platforms to cherry trees outside a supermarket. Raised beds and polytunnels are being put in at schools and fruit bushes and trees are being planted in a community orchard on newly cleared woodland.

Finding vacant land is not easy, so we even find examples of cultivation of vegetable in boxes and pots kept on the roofs of residential boats moored along the urban reaches of canals. Green roofs, which have many sound environmental benefits, are also being used for food production. Car parks are another space where pockets of land can be used to grow food.

Oxford has a pro-active allotment strategy, in addition to a tight control of its green belt and any urban encroachment on to rural land. The allotments strategy is designed to encourage the use of allotments by disadvantaged groups in particular. Originally the city provided allotments for people who had recently moved to the city from rural areas (Elkin and McLaren, 1991)^{vii}.

In Birmingham, a spontaneous community effort joined together a group of weed-choked gardens to form Ashram Acres, an exercise in small-scale land reclamation, animal husbandry and horticulture undertaken by local residents of Asian origin, many of whom originally came from rural backgrounds (Elkin and McLaren, 1991).

In Ashton-on-Mersey, Greater Manchester, an organic vegetable garden at a residential care home has been augmented by the development of a sensory garden that will include different flowers and herbs to stimulate the senses and assist the recovery of people with mental health problems. In this way, urban food production is linked to human health and sustainable living.

At the University of Gloucestershire, Cheltenham, UK, a plot of land has been developed by students into an allotment, with the student union planning to redevelop an allotment society where through collaborative effort vegetables are grown at little cash outlay by the students. Other UK Universities are encouraging similar schemes of vegetable growing in on-campus allotments (Smithers, 2010)^{viii}.

Society generally should become more efficient at recycling of materials. It is not sustainable and ecologically sound to export large quantities of recycled old machinery, paper and cardboard. The country should have its own circular economy. Particular attention needs to be given to dematerialisation and rematerialisation, to sustainable use of materials and resources, to industrial symbiosis (the use of the waste from one plant in a neighbouring one) and use of materials such as construction and demolition waste (Ayres and Ayres, 2002)^{ix}. National and local governments should work with and support the retail companies in the UK to move towards fully sustainable procurement (Solace 2003)^x. This would create markets for sustainable products abroad. They should encourage more transparent discussion of how companies are moving towards full ecological redesign to enable informed consumer choice.

Question 6 – What best practice and innovative approaches to protecting and enhancing our natural environment do you think should be considered as we develop the White Paper?

Appropriate taxation and legislation does change environmental behaviour by both businesses and households, as shown by the landfill tax and the recycling targets for local authorities that have greatly increased the national and local recycling rates.

Ecosystems and wildlife habitats become severely disrupted where soils have been degraded. Where they have not been affected, and wherever else nature is largely in control, a reasonable proportion, in large chunks, should simply be left to nature, with

minimal or zero management. Alien species might be eliminated, but this would multiply the required resources. Otherwise, these areas should be monitored through generations so that we may record the processes by which nature actually does work. Doubtless, land that has been left to nature will have fewer species per small unit area than many nature reserves, but it would allow UK and other countries to play their part in the establishment of a more natural world, with each community of species thriving, and providing ecological services within the ecological space where it naturally belongs.

Where soil has degraded by previous industrial or urban uses, creative conservation techniques have a particularly tested and proven track record of promoting urban wildlife. Furthermore, using colour to complement rather rigid interpretations of the green infrastructure concept is highly effective: colour and beauty are principal ways to engage people. Landlife's use of creative conservation techniques engaging people in rural and urban communities alike has proved this, by the use of colourful and diverse landscapes (Landlife, 2004)^{xi}.

The Independent Biodiversity Policy Review for example highlights Landlife's work:

"One classic example of what can be done that was abandoned and written off in terms of biodiversity is in council estates in Knowsley on the edge of Liverpool. There the residents together with Landlife have built a remarkably diverse native wildflower landscape of national importance in a comparatively short time. It has reconnected people with the natural world and probably made them healthier in the process." (Biodiversity Policy Review, page 21).

Urban environments, by definition, are severely modified by human activity in the long term. Positive action for wildlife can, however, have serious benefit. For example, planning authorities should be able to compel developers to incorporate extensive green areas in new or redesigned estates. This will reduce housing density (and profitability) but will permit a degree of semi-natural land. Current best practice which should be encouraged includes implementing numerous small features such as nest holes for swifts, ledges for peregrine falcons on tall buildings, wildlife-friendly maintenance of roadside verges, and planting native trees on motorway verges.

The Biosphere Reserve concept is ripe for use as the 21st century successor to the traditional protected area. In the past, protected areas have become oases or islands of declining biodiversity in a hostile landscape. The Biosphere Reserve concept turns the idea on its head by directly linking economic prosperity and the development of social cohesion to the quality of local biodiversity. For example, in the Biosphere Dyfi Biosphere, a £250,000 initiative is linking local walking and cycling routes through world-class landscapes with local economic hubs to generate more local income and give local businesses a stake in ensuring local natural assets are protected.

Question 7 – How best can we harness and build on public enthusiasm for the natural environment so people can help improve it through local action, as informed consumers or by shaping policy?

The Biosphere Reserve concept seems once again suitable for use in these contexts. Should Brighton develop its bid to become central to a new Biosphere Reserve it will demonstrate how the entire population of a UK city can be engaged in action across all three pillars of sustainable development, driven by the presence of internationally important biodiversity in the South Downs area. This perhaps offers one of the best opportunities in the UK to develop goods and services whose production enhances, rather than detracts from the protection and promotion of biodiversity.

An indication of societal outcomes derived from community engagement in the development of local biodiversity can also be seen in ‘Discover Yourself Outside: New landscapes for a civil society in a changing climate’ (2010). The Forum has published this document which has already been circulated to all UK members of Parliament and relevant agencies (including DEFRA) to highlight how the strategic development and use of green spaces and ecosystem goods and services is a strong factor in achieving outcomes for a Civil Society. The case studies demonstrate how:

"Civil Society can be achieved by starting conversations with and between residents about the opportunities for change, enabling them to appreciate and get the most out of their surroundings, and then to communicate that positive message and so spread the benefits into the wider community."

"In this way people start to use the communal outdoor environment which helps them to get to know their neighbours. This helps build a sense of pride in the neighbourhood which they will take steps to protect." (Page 2)

It is important to find mechanisms that reward people’s inputs to protecting and enhancing the local environment. There may need to be a way to allow people to be paid for such work in alternative currently schemes without losing benefits or paying taxes on this payment to ensure there are no perverse consequences such as people ending up financially less well off due to their efforts.

Time banking schemes (www.timebanking.org) could be linked to long term care of the elderly, so that people feel that they can bank time whilst they are healthy and fit, to help look after them when they are unwell and frail (Simon, 2010)^{xii}. Linking civic engagement in natural resource management directly to long-term benefits in health could help raise awareness about the health benefits of the natural environment and the exercise involved in helping restore it.

Question 8 – What should be our vision for the role of Civil Society in managing and enhancing the natural environment and for engaging individuals, businesses and communities in setting the agenda for that work?

The document ‘Discover Yourself Outside: New landscapes for a civil society in a changing climate’ (2010) demonstrates the vast evidence base which already exists in the broad terms of benefits of green environments. However the case studies identified in it

serve as practical models which champion sustainability based on a variety of actions and projects that engage individuals, communities and businesses. The White Paper should consider these as a guide and support more of the same.

Partnership working has been highly successful in developing wildlife reserves that include SSSIs and public access open space in the former coalmining districts affected by subsidence in northwest England. These include the Wigan Flashes now part of the Wigan Greenheart Regional Park. The list of partners working with Wigan Council on the Greenheart project shows the type of collaboration required, in addition to work with individuals and organizations within the local communities:

- Bridgewater Canal Trust
- British Waterways
- Groundwork Lancashire West & Wigan
- Lancashire Wildlife Trust
- Land Restoration Trust
- Leigh Sports Village
- Red Rose Forest
- North West Development Agency
- Wigan Biodiversity Partnership
- Wigan Leisure and Culture Trust

We need to extend participation by involving people in designing alternatives, and creating real visions for the future of areas. Such participation needs to be seen as a learning approach, so that people are able to learn about the ecosystem services in their area and learn to integrate sustainability guidelines into the planning process. If consideration sustainability and ecosystem services are left to be an ‘expert add-on’ and not part of the participatory process, plans likely to be fragmented and sub-optimal solutions developed. Importantly, there is also less likely to be local support for, and skills to maintain eco-systemic services, such as Sustainable Urban Drainage Systems (Douglas et al., 2010)^{xiii}.

We need to incorporate the principles of ecological design into the planning process and into every visioning and planning process (McHarg, 1969)^{xiv}. This means going beyond ideas such as mitigating harm to designing gardens and neighbourhoods as food producing, ecologically diverse habitats, which gather energy and act as rain water sponges. Farms and landscapes can also be designed to connect wildlife and offer integrated pest management at wider landscape scales. This involves:

1. Developing planning processes to focus on opportunities and assets (e.g. cultural, biological, landscape, historical), not problems.
2. Not relying on creativity happening on its own: but using creative thinking tools and skills training.
3. Using a holistic approach to maximise potential synergies from participation.

Question 9 – How best can Government incentivise innovative and effective action on the natural environment, across England, at the local level?

a. How best can local Government and other local partners work together to improve local outcomes on the natural environment, and pursue a more integrated approach linking a healthy natural environment to economic prosperity, sustainable development and a better quality of life, health and wellbeing?

Examples of the Biosphere Reserve concept being highly appropriate here are already available. Both North Devon and the Dyfi have used the concept to unify action and promote cooperation across local authority boundaries by giving the authorities a stake in attracting benefits from association with the name of UNESCO. The Southern Upland candidate Biosphere Reserve has been equally enthusiastic and successful in this endeavour.

Because Biosphere Reserve management plans/policies must, by statute, be "pacts" with local communities this is one of the best existing mechanisms for driving cooperation - based on the incentive provided by continued association with the UNESCO "brand".

However, because Biosphere Reserves are entirely voluntary they do require enabling mechanisms to get them over the initial hurdles and would benefit from legislation that encourages partners to "bend" existing programmes to focus on activities within their boundaries. For example, if guidance were to be issued which indicates that, in the event of a tie, applications for funding would be considered more favourably from Biosphere Reserves, it would encourage even more activities to be attempted in Biosphere Reserves. The White Paper should therefore promote these strategies.

Another good example of the desired collaboration is the group developing the management of the West Pennine Moors, an area of great value to a large urban population, but which has no specific conservation status as a whole. The West Pennine Moors Area Management Committee comprises representatives of Borough Councils, a County Council, a utility company and a series of government agencies and partnership organizations with NGO members:

- Blackburn with Darwen Borough Council
- Bolton Metropolitan Borough Council
- Lancashire County Council
- North West Water plc
- Bury Metropolitan Borough Council
- Chorley Borough Council
- Hyndburn Borough Council
- Rossendale Borough Council
- Countryside Agency
- North West Council for Sport and Recreation
- North West Federation for Sport, Recreation and Conservation
- West Pennine Moors Conservation and Research Advisory Committee
- Groundwork Trust

Groundwork has been effective in engaging with local communities by involving local teenagers in training schemes on undertaking environmental projects in their own neighbourhoods. Once they have participated, they take pride in their handiwork and help to ensure that it is not vandalised and is kept in good condition. Such a sense of “ownership” also can encourage community to group together to help to maintain environmental improvements. All too often such work is funded by one-off grants and once it is completed and the funds exhausted, there is no maintenance and the good work is lost.

The importance of getting “ownership” and “stakeholder concern” through participation cannot be over emphasised. In many urban wildlife conservation areas with active recreational use, the rangers or wardens play an extremely important role in building up community relations and in getting people to take a pride in “their” natural open space. At a time when such services and the presence of people like park keepers are threatened, this valued way of working together should not be lost. The Mersey Valley Warden Service, especially at Chorlton and Sale Water Parks in Greater Manchester, could be highlighted as an example of excellent engagement with the local community.

b. What are the most effective mechanisms for managing the natural environment where cross-boundary issues are involved, and making the link to other mechanisms for economic growth, transport and planning?

There is a need for vision to be articulated, made visible, and consciously used in design and decision-making. There will need to be expert and professional support to develop links between different plans and their ecological components, such as access to green space, building societal resilience in particular to flood and drought, local food plans and health promotion. This will require not just time and resources made available to local communities to make the most of such integrated planning processes, but also capacity building of the professionals involved. Capacities to be built would include – integrated GIS and spatial analysis, facilitating participatory planning, ecological design and assessing plans and options against sustainability criteria. The 25-year Mersey Basin Campaign is an excellent example of the joined-up working and community involvement required in tackling severe environmental problems at the river basin scale. (see www.merseybasin.org.uk/).

Planning across different levels of scale has to be linked up to:

1. Provide increased opportunities for active stakeholder involvement in planning at the landscape level of scale. This can inform local level planning.
2. Catalyse stakeholder interest in planning at the landscape level by linking it with planning at the site level and neighbourhood level (which tends to be the level at which people are more motivated). Thus small-scale projects can be implemented as part of a broader envisioning process.
3. Use strategic issues developed at the river basin or regional level of scale to inform planning at the landscape level of scale. Solutions to these issues may also be developed in planning at the landscape level.

4. Develop mechanisms for synthesis of top-down and bottom-up planning, e.g. through using communication tools that can be transferred across different levels of scale and working at more than one level of scale in a parallel planning process. Use of a transferable design process and common metadata at the different levels of scale can facilitate such synthesis.

There will need to be dedicated resources in terms of professional skill and time to make the most of these links. There should be skills training for project coordinators, stakeholders and community members as part of the envisioning process.

As the need for this support varies over time in the different areas, a flexible team of resource people can offer support to several different landscape areas. Resources could be pooled (e.g. time, money and expertise) for different participatory processes (e.g. those required by the EU Water Framework Directive (WFD) with community strategies and local regeneration projects to allow for more resources to enhance the quality of an integrated process.

c. How best can the value of the natural environment be considered within local planning?

Local planners need a thorough knowledge of a particular environment, possibly in the form of a GIS, for the development of instruments such as Green Infrastructure Plans and Biodiversity Plans. Give key local environmental organisations a chance to comment on planned developments. There has to be adequate ecological and environmental science training in the education of planners and engineers.

Integrated into and as an essential part of the planning and decision making process, a Cost Benefit Analysis should automatically include the ecosystem services costs or benefits. The following measures should be considered:

1. Develop more flexible funding arrangements, e.g. through delegated funding and community trusts for implementing plans, letting the planning process determine the funding cycle, rather than the funding cycle driving overhasty implementation.
2. Allocate funds for ongoing maintenance. This should include resources for further review and planning with stakeholders.

In each area, different groups may have the opportunity to offer a unique catalyst role and this can feed directly into the local regeneration through landscape improvements and lead directly to increased use of open spaces. For example, when reactions to wildflower landscapes were gauged by questionnaire in Kirkby, Merseyside, results showed that 97% of respondents wanted more wildflower landscapes and 64% of people said they were more likely to venture outside (CABE Space 2006, p34).

The National Wildflower Centre in its ten years existence has contributed to leveraging £21 million investment into Knowsley, Merseyside and the Eden Project, in its first five years of opening, contributed £700m to the Cornish economy

(<http://news.bbc.co.uk/1/hi/business/5216102.stm>).

Question 10 – How best could the economy reflect the true value of nature’s services in the way business is done, to drive smarter, greener growth?

Please refer to Question 2 about the report *The Economics of Ecosystems and Biodiversity: Ecological and Economic Foundations* (TEEB). DEFRA should be able to define the cash value of ecosystems and biodiversity in order to drive smarter, greener growth.

A shift should be made towards looking at ecosystems and biodiversity as investment rather than cost.

Tighten the requirements for environmental, sustainability and corporate responsibility statements in company reports. Use the ecosystem services approach to look at environmental use and benefits of a company’s operations.

Question 11 – Responsible businesses are already looking for ways to reduce their impact. How can we encourage more action like this?

Appropriate taxation, such as the landfill tax, carbon taxes, vehicle registration fees based on emissions are proving effective. Much depends on the type of business. For example in terms of rural businesses, the kinds of development that could be undertaken include promoting carbon-positive farming in the uplands where CO₂ is extracted from the atmosphere in greater quantities than it is released to it - and food is produced into the bargain. Similarly, the Pontbren project in Powys (http://www.pontbrenfarmers.co.uk/project_background.html) has demonstrated that better management of riparian zones on upland farms can reduce veterinary costs whilst reducing rainwater run-off and downstream flooding.

In many urban businesses, much can be gained by demonstrating that all their operations can be greener; for example through what they do with their roofs (solar panels or green roofs), the development of car parks and the provision of SUDS, by encouraging cycle or public transport use by subsidies, and waste management (recycling and making use of biomass digesters for combined heat and power).

Question 12 – What are the barriers to joining up and seeking multiple benefits from our natural assets?

Disciplinary, organisational and departmental silos are probably the key barrier to joined-up thinking and the "toolbox of toolkits" approach advocated by the Urban Forum will be extremely helpful in promoting dialogue to overcome those barriers by creating overlaying resource maps which show where multiple benefits are required against existing assets. In Glasgow a community representative at a meeting was heard to say, "So our new park is your new SUDS" - use of the proposed Forum toolbox will facilitate many more such comments.

There is a need to encourage lateral thinking and collective consideration of environmental issues, such as all facets of industrial ecology, including life cycle assessment and dematerialisation as well as symbiosis with adjacent industries.

A major barrier could be the loss of expertise that will come with major job cuts in the public sector. Whilst the role of local communities in this process is key, there seems to be too high an expectation that community members and civic society have the capacity (time, resources and expertise) to develop integrated, holistic plans at multiple scales without significant support in doing so. The lack of skills in coordinating such integrated planning amongst professionals must be addressed – there is a real need for capacity building and in supporting the set up of facilities for practitioners to learn from each other. This is highlighted by the loss of key organisations which have played a role in coordinating information and developing strategic plans, such as regional development agencies and the Royal Commission on Environmental Pollution.

Question 13 – What are the barriers to thinking big and taking a landscape scale approach to managing our natural assets?

The mindset that thinks only within boundaries of properties/wards/local authorities, individual organizations/departments: sectional interests of lobbying NGOs and businesses.

Conflicting boundaries and time scales for reporting and action for different aspects of the environment – e.g. habitats, river basin management, and flood risk management

The need for a regional level of scale to offer a coordinating mechanism and provide a strategic overview to make the most of planning at the landscape level of scale – we need to remember Forman’s paradox of management:

"Success in attaining sustainability is more probable for a region. Yet, landscapes offer significant advantages. ...Planning, conservation and policy are more likely to make a difference, i.e. to have a visible effect" (Forman 1998)^{xv}

Question 14 – What should be the priorities for the UK’s role in EU and international action, to protect and enhance the natural environment at home and abroad?

Whilst supporting the protected area systems which have become the refuge for much biodiversity and source of many ecosystem services, the UK should now push for widespread adoption of measures to promote sustainable development in the wider environment - reform of the Common Agricultural and Common Fisheries Policies (CAP and CFP) will be crucial in this respect. Wales showed the way with its original, pioneering Tir Cymen agri-environment scheme and this ethos should be extended to the whole of the CAP. If the EU can implement a policy for the sustainable harvesting of marine biological resources (including fisheries) then it will set a standard for the world that will be critical for human well-being given the reliance by many developing countries on protein from marine sources.

A fundamental issue is whether Earth is made exclusively for humans or whether other species have rights. Just how much land must humans requisition from Nature? Why and how has the population explosion debate been allowed to be suppressed? This debate

was at its height in the 1970s, when we were already greatly too numerous; since then we have doubled our numbers. Today's human population is probably 10 times greater than is compatible with the survival of any other large mammal in the wild. Why is it that developing countries can get far more aid support for population increase than for family planning? Our continued population growth overwhelms our efforts to both improve human life and to live in harmony with nature. We neglect this at our, and the environment's, great peril.

The UK has the capacity to provide a role model for integrative sustainable development across various levels of scale.

Question 15 – If you could choose just one priority action for the Natural Environment White Paper to drive forward locally, nationally or internationally – what would it be?

The one priority action for the white paper to drive forward locally, nationally or internationally should be to retain, recreate and enhance on a sufficient scale, places where people and wildlife/biodiversity can flourish together. This should include a full range of sites from natural and communal open spaces and leisure facilities to urban food production and sustainable farming and from SSSIs to National Parks and Biosphere Reserves. This could be achieved by a major investment in integrated land use planning and local community participation.

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ⁱ Constanza et al., 1997

ⁱⁱ Cavan at al., 2009

ⁱⁱⁱ Yuan et al., 2006

^{iv} Hansen et al., 2001

^v East Midlands Landscape Partnership 2010

^{vi} Perrone, 2009

^{vii} Elkin and McLaren, 1991

^{viii} Smithers 2010

^{ix} Ayres and Ayers, 2002

^x Solace, 2003

^{xi} Landlife, 2004

^{xii} Simon, 2010

^{xiii} Douglas et al., 2010

^{xiv} McHarg, 1969

^{xv} Forman