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NEWS

The John Connell Memorial Award

Entries are now invited for The John Connell Memorial Award, an annual competition for the best undergraduate dissertation on an environmental science-based topic submitted by a student in higher education. There's little time to waste Environmental Scientist readers should note that the deadline for submissions is 3rd December 2005.

Jointly sponsored by the Institution of Environmental Sciences and the Noise Abatement Society, in collaboration with the Committee of Heads of Environmental Sciences (CHES), the award commemorates the life and work of John Connell, the founder and director of the Noise Abatement Society.

The project on which the submitted dissertation is based should be an independent study, originated by the student. The administrators and judges of the award take particular steps to ensure that the work neither shows links to a funded research programme, nor exhibits undue similarity to the student supervisors known and published work.

In recognition of the fact that different higher education departments operate under various rubrics in respect of length, supervision and presentation, and in order to embrace this variation in a fair manner, the main criterion of assessment for submissions is quite simply, 'Excellence in the field of Environmental Sciences'.

Expanding on this, the organisers of the award interpret this to include:

- a rationale for the project
- a clear statement of aims
- project design
- explanation of methods
- clear presentation of data
- sound analysis and interpretation
- conclusions which relate to the aims
- good quality of exposition and presentation.

The judges also take into account such factors as over-reliance on a single fashionable technique and that the volume of work is not of itself indicative of excellence.

Because this is a national award, the Institution asks that departments submit only exceptional dissertations. In their turn and to avoid any later problems, departments are asked to provide the award organisers with a copy of their regulations for dissertations as given to undergraduate students.

If anyone requires further details, please contact Abhishek Sharma at the Institution of Environmental Sciences (IES), telephone 020 7730 5516.

NB: IES-UK. OK?

Keeping membership informed of the Institution's news has become such a full time requirement that the IES website has recently been given an overhaul and new look. Click on *www.ies-uk.org.uk/* for the latest in terms of Institution development, forthcoming events, consultations, membership information, course accreditation and more. It's all there, easily accessible in response to minor movements of the digits on a mouse. Rumours that the update and redesign was arranged due to a potential 'Mystery Hitter' visit from this Journal's Web Wise page are simply not true. No, really.

The site's webmaster is happy to host information and links relating to IES members own events. To find out more visit the website, or those with no sense of irony can contact the IES office by phone or send a written message via a runner with a cleft stick. Not to be confused with www.ies.org.uk, Independent Examiners Services, who offer accountancy services to church and charity organisations.

Credit where credit is due

Following the positive response to his inclusion in the last issue, another pertinent Chris Madden cartoon graces these pages. For those who want more of the same, visit *www.chrismadden.co.uk* for further samples and details of his book, *The Beast that Ate the World*, published by Inkline Press, price £6.99.

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Contributions

The Environmental Scientist aims to provide a forum for members' contributions, views, interests, activities and news, as well as topical feature articles. Articles of up to 2,000 words should be submitted to the Editor, Environmental Scientist, Suite 7, 38 Ebury Street, London SW1W 0LU; Email: enquiries@ies-uk.org.uk
Views expressed in the journal are those of the authors and do not necessarily reflect IES views or policy.

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NEW READERS START HERE

A lot has happened since the last issue of Environmental Scientist – so much in fact that we reproduce here a short digest of the most notable changes to the Institution since that issue. This is an updated version of the news circulated to individual members through a special report from Jennifer Blumhof, the IES Honorary Secretary

This last year has been extremely busy and productive for the IES. This year, the Council met three times and the General Purposes (GP) Committee five times, with Professor James Longhurst in his third year as a Chairman of the IES. We have piloted a new committee system whereby committee members have been designated and subsequently taken on a particular IES job portfolio. The modernisation of our administrative systems has continued apace with a robust data management system and a more effective communication with membership through a new email system. A re-designed website has just been launched, which will improve and enhance communication with our membership and link us more effectively to the environmental science community.

For example, this will facilitate the members of the Institution of Environmental Sciences to respond to a range of consultations carried out by government bodies such as Department of Environment, Food and Rural Affairs (DEFRA), Environment Agency (EA) and the Office of Deputy Prime Minister (ODPM) on issues as wide-ranging as sustainable development, air and water quality, town and country planning, and land use and management. In April 2005, the IES responded to the Higher Education Funding Council for England and Wales (HEFCE) on the Education for Sustainable Development (ESD) Consultation on behalf of the IES. We also have the pleasure of welcoming our new Accountants, WH Fisher, who have greatly assisted us in modernising and making our accounting systems and procedures more robust.

Following many years of steady work and support, our most notable achievement was recognised after the year end, and following a successful audit, with the issuing of a licence to the IES by the Society for the Environment (SocEnv). This has enabled us to grant the status of Chartered Environmentalist (CEnv) to appropriately qualified members. For a period of one year from 22 September 2004, under a special 'grandparenting' process, those IES members who meet the designated criteria will be able to apply for recognition under the scheme.

After this period, members are still allowed to apply for such recognition, but the process itself will automatically include an interview (optional under the grandparenting scheme) and could also include the provision of a portfolio of evidence. I am delighted to report that to date 91 members of the IES have been awarded Chartered Status. I would like to thank Dr Tim Bines, the former Chief Executive Officer (CEO) of the Society for the Environment, for his help and support throughout the process. I would also like to extend a warm welcome to Dr David Hickie, the newly appointed CEO of SocEnv. More information on CEnv and SocEnv can be accessed on the IES and SocEnv websites, *www.ies-uk.org.uk* and *www.socenv.org.uk*

The IES has continued to support the operation of the Institute of Air Quality Management (IAQM), which has in turn brought in further new members to both Institutions. In line with the IAQM constitution, a new Chair and Honorary Treasurer will be elected in November 2005.The work of the IAQM can be viewed at *www.iaqm.co.uk*

In an important development, the honorary secretary promoted a review by the Council of the IES of the rather dated IES constitution and at present, a revised and modernised constitution (in line with Charity Commission guidelines) has been submitted to the Charity Commissioners for comment. A new constitution will be set out in a modern format and all IES members will be sent a letter with the revised constitution for them to vote on at the next IES Annual General Meeting in March 2006.

In partnership with the Committee of Heads of Environmental Sciences (CHES), which is currently chaired by Institution Council Chair Jim Longhurst, the IES has continued to be active in the accreditation of undergraduate and postgraduate degree programmes in universities in 2004. A special feature of the IES has been its close association with higher education institutions. It is hoped that the IES website re-development and the careers website will further reinforce this relationship. Carolyn Roberts, an IES Council Member, continues to support and raise the profile of the IES accreditation scheme with her involvement in the Education for Sustainable Development scheme set up by the Higher Education Funding Council for England and Wales (HEFCE).

As a voluntary organisation, the IES is dependent upon the dedication of its honorary officers and Council Members. Thanks are due to all IES supporters and those involved in the activities of the Institution for their extremely hard work this year, in particular, to Abhishek Sharma for his help and support in the IES operation.

Finally, the Institution extends a welcome to our 97 new members since October last year and sends warmest congratulations to our 185 new Chartered environmentalists.

AGRI-ENVIRONMENTAL SCHEMES IN FARMLAND IN ENGLAND AND WALES

Improving environmental performance using agri-environment schemes has had a mixed reception in the UK, but does it deserve it? **ABHISHEK SHARMA** looks at the evidence and wonders why the jury is still out

Agri-environment schemes promise to be a signature policy for improving environmental performance by agricultural-related activities in UK and Europe in years to come. The schemes provide financial incentives to farmers and landowners for implementing and practising sound land management measures to 'protect and enhance' both farmland biodiversity, and a range of historic and archaeological infrastructures. In addition, and probably most contentiously, the schemes also open up the countryside for access to the general public.

All this has been perceived as some of the most significant environmental legislation to have been enacted in the last decade, with the potential to reverse much of the damage caused by agricultural practices in UK and Europe since the 1950s. Although the two major agri-environment schemes – the Countryside Stewardship (CS) and Environmentally Sensitive Areas (ESA) – have already produced some positive results, these have only been in terms of maintenance of existing landscape habitats, with the notable exception of reverse of the decline of farmland bird species such as the Cirl bunting.

Although the agri-environment schemes have been perceived by academics and NGOs as lacking in success, this article goes on to examine whether this is mostly attributable to the absence of robust ecological evaluation and research studies which would have otherwise allowed for a more evidence-based judgment of the schemes' effectiveness. In broader terms, the popularity of the schemes may also have been affected by the enhanced potential for additional financial burden on farmers to implement the land management measures, a burden that the schemes' compensation payment structure may be insufficient to address.

Taking an overall perspective, it is then possible to form some idea as to whether the schemes have the potential to deliver the hoped for environmental benefits as well as the social and economic renewal of the somewhat neglected rural parts of Britain, or whether they are being written off too early in their regulatory life. Only then can an assessment be made regarding their contribution to realising the vision of sustainable communities.

Agri-environment schemes represent a means of rewarding farmers for environmentally sensitive management of their land. They were established in the UK in 1987 with the primary objective of encouraging farmers to adopt environmentally aware farming practices by providing support in the form of grants. The development of the schemes was prompted initially in response to concern over the impacts of agricultural changes on valuable habitats, species and landscapes in the UK and Europe. The schemes also act as the main mechanism by which farmers are compensated for any potential loss of income as a result of switching to less intensive, but more environmentally sustainable farming methods.

Since October 2000, agri-environment schemes have become part of the government's England Rural Development Programme (ERDP), which aims to help develop thriving, economically viable and attractive rural communities. The programme aims to achieve this through schemes which promote productive and sustainable rural economy whilst simultaneously safeguarding the rural environment and its intricate values for future generations in line with sustainable development (Butterfly Conservation, 2002).

The evolution of policies and schemes

Over the past 20 years, farming methods, encouraged by the Common Agricultural Policy (CAP) followed a trend towards greater intensification, as a result of which widespread environmental impacts occurred. This trend affected the biodiversity, landscape, archaeological and historic value not only of the farmed but also the unfarmed countryside. A key indicator of such impacts has been the effects on bird populations, especially in the lowlands, which have witnessed a considerable decline in farmlands between the mid 1970s and mid-1990s as indicated by the long-running bird census data. Their decline has been considered as a true reflection of a wider decline in farmland biodiversity, including plants and animals of arable habitats (DEFRA, 2003).

Although the impacts of agricultural change upon landscape characters and quality are less easy to measure objectively, some datasets have recorded landscape changes over the past 50 years. They indicate that between 1947 and 1972, 30% of trees and small woodland cover was lost throughout England, even though these trends have recently been reversed (DEFRA, 2003). Similarly the loss of hedgerows has also been considerable until the mid-1990s (DEFRA, 2003). Dry stone walls, a prominent characteristic of many upland area landscapes, have also fallen into disrepair. A study carried out by the Countryside Agency (previously the Countryside Commission) in England in 1996 found 96% of dry stone

walls surveyed were in need of restoration (LANTRA, 2004). Agriculture has been identified as the principal cause of such damage and disrepair.

In order to contain the damage and reverse the trend of intensive farming practices, the government established the agri-environment schemes to encourage more extensive and sustainable methods of farming and land management. The agri-environment policies and schemes in England have subsequently been incorporated as an element of Common Agricultural Policy (CAP) reform and are co-funded by the EU as part of the England Rural Development Programme (ERDP), under the EU Rural Development Regulation (RDR) (Council Directive 1257/99).

Currently there are two flagship agri-environment schemes operating in England, administered by the Department of Environment, Food and Rural Affairs (DEFRA) - namely the Environmentally Sensitive Areas Scheme (ESAS) and the Countryside Stewardship Scheme (CSS).

Environmentally Sensitive Areas Scheme (ESAS)

This grant-aided scheme was introduced in 1987, providing farmers and land managers in designated areas of England a real opportunity to play a part in conserving traditional landscapes and features as well as improving and extending wildlife habitats.

The ESA schemes have been designated in numerous parts of England and Wales since 1987 in four stages, as outlined in Table 1.

Table 1: ESA scheme coverage – 1987-1994

ESA scheme	Year designated	Areas covered
Stage I	1987	Broads, Pennine Dales, Somerset Levels and Moors, South Downs and West Penwith
Stage II	1988	Breckland, Clun, North Peak, Suffolk River Valleys and Test Valley
Stage III	1993	Avon Valley, Exmoor, Lake District, North Kent Marshes, South Wessex Downs and South West Peak
Stage IV	1994	Blackdown Hills, Cotswold Hills, Dartmoor, Essex Coast, Shropshire Hills and Upper Thames Tributaries

Source: DEFRA, 2003. Review of agri-environment schemes – monitoring information and research and development results.

The original objective of the scheme was 'to help conserve those areas of high landscape and/or wildlife value which are vulnerable to changes in farming practices, by offering payments to farmers willing to maintain or introduce environmentally beneficial farming practices' (DEFRA, 2003). However, following the review of Stage I and Stage II ESAs, the scope of the scheme was extended to include enhancement of the existing habitats in addition to their maintenance.

Farmers with land eligible under ESA schemes are offered a ten-year agreement that provides annual payment in return for following a prescribed set of management measures. The scheme is structured into tiers of management, with tier 1 generally aimed at retention and maintenance of existing landscapes and habitats by preventing further agricultural improvements, whereas the higher tiers involve enhancement or creation of new habitats through active management measures (DEFRA, 2003). The scheme has been subsequently reviewed and re-launched in five-year cycles, with revisions being made as appropriate.

Countryside Stewardship Scheme (CSS)

The Countryside Stewardship Scheme began as a pilot project under the then Countryside Commission in 1991. It makes payments in the form of grants to farmers and other land managers to enhance and conserve English landscapes, their wildlife, natural beauty, diversity and history (as well as restoring and recreating targeted landscapes) and to improve public access for countryside enjoyment. Farmers and land managers enter a 10-year agreement to manage their land in an environmentally beneficial manner, in return for annual payment (Butterfly Conservation, 2003). All payments cover incomes forgone as well as any cost incurred in applying supplementary practical management measures such as hedging and walling. Each county is allocated its own specific targets for landscape types and features, which include chalk and landscape grassland, lowland heath, waterside land, coastal land, meadows and pasture (DEFRA, 2004).

Both schemes contribute to the delivery of DEFRA's Public Service Agreement (PSA) targets for 2003-06, target 3 in particular, which includes:

'Care for our natural heritage, make the countryside attractive and enjoyable for all, preserve biological diversity by:

- reversing the long-term decline in the number of farmland birds by 2020, as measured annually against underlying trends;
- bringing into favourable condition by 2010, 95 per cent of all nationally important wildlife sites; and
- opening up public access to mountain, moor, heath, down and registered common land by the end of 2005 (DEFRA 2004).

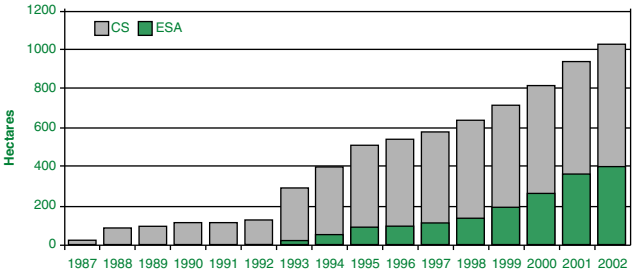
Thus apart from maintaining and enhancing the existing landscape and wildlife in England and Wales, the agri-environment schemes play a pivotal role in public service delivery by opening up the improved countryside for access and enjoyment by the public at large. The schemes have also been identified as playing an important role in helping the government meet its UK Biodiversity Action Plan (BAP) commitments in line with implementing the International UN convention on Biological Diversity agreed at the World Summit on Sustainable Development at Johannesburg in 2002.

The current scenario

Partnership working has been a key aspect of both agri-environment schemes in UK (DEFRA, 2004). A number of statutory agencies such as the Countryside Agency, English Heritage, English Nature and the Environment Agency, together with a range of non-governmental organisations, including the Wildlife Trusts, the Royal Society of the Protection of Birds (RSPB), the National Farmers' Union (NFU) and so on, are proactively involved in all aspects of the scheme at both regional and national level.

Both schemes have witnessed significant expansion and uptake between 1987 and 2003, with the total areas covered increasing to over 1 million hectares – 615,000 hectares (ha) under ESAs and over 400,000 ha under CS (Figure 1), with a two-fold increase in the latter since the introduction of ERDP in 2000.

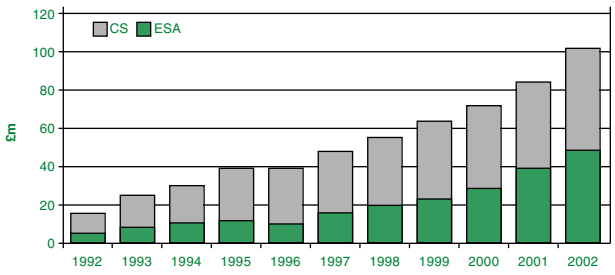
Figure 1: Total area (000s hectares) under schemes: 1987-2002



Source: DEFRA, 2004: Countryside Management & Environmentally Sensitive Areas Schemes, Annual Report 2002-03

A concomitant significant increase in expenditure has also occurred on both schemes, with the increase being particularly marked for CS since the introduction of ERDP (Figure 2). The funding for the schemes has increased significantly from just over £13 million allocated in the financial year 1992 to over £105 million in the financial year 2002-03, with £53 million and £52 million towards ESAs and CS respectively. Of this, £81 million was for annual land management and £24 million for capital works (DEFRA, 2004).

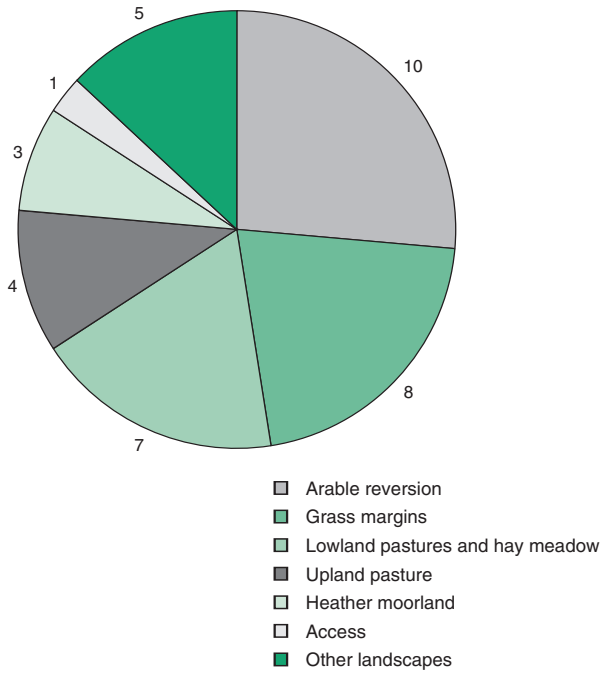
Figure 2: Expenditure on ESA/CS schemes



Source: DEFRA, 2004: Countryside Management & Environmentally Sensitive Areas Schemes, Annual Report 2002-03

CS agreement holders received a total of £38 million for a variety of landscape management measures (Figure 3), including £1million for the annual management and maintenance of access routes such as footpaths, bridleways and cycle paths for the public at large.

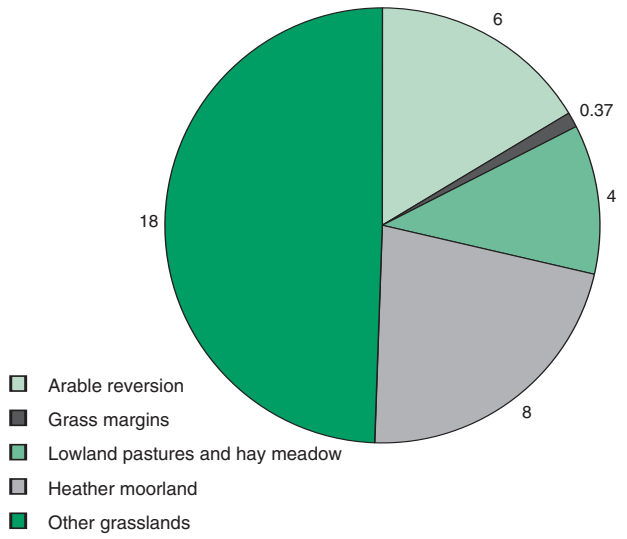
Figure 3: CS expenditure (£m) on landscape management 2002-03



Source: DEFRA, 2004: Countryside Management & Environmentally Sensitive Areas Schemes, Annual Report 2002-03

Meanwhile, ESA scheme holders received over £43 million for the annual management of variety of landscapes, as shown in Figure 4.

Figure 4: ESA expenditure)£m) on landscape management 2002-03



Source: DEFRA, 2004: Countryside Management & Environmentally Sensitive Areas Schemes, Annual Report 2002-03

Measurable environmental benefits

Both Countryside Stewardship and Environmentally Sensitive Areas schemes, by their very nature offer a holistic approach to countryside management. Although it is still early to quantify the success of all of the schemes unequivocally, a number of improvements are discernible. These are primarily in terms of maintenance and enhancement of biodiversity, notably through landscape management measures such as the development of cereal field margins, protecting and maintaining grassland, meadows and hedges, all resulting in an increase and protection of 'species rich' areas.

Regular monitoring and evaluation programmes for both schemes have been in place to assess their success against objectives. A consortium led by Echoscope reviewed and provided relevant research to the programmes and concluded that the existing schemes have largely met their primary objectives of maintaining biodiversity, landscape and historic interest (DEFRA, 2004). Some of the CS and ESA schemes in England and Wales and their actual and perceived benefits are outlined in Table 2.

Table 2: Agri-environment schemes and benefits – notable case studies

		Study area	Schemes in place	Management measures	Benefits (actual and perceived)
Landscape	Heath and chalk down land	Ventor Downs (Isle of Wight)	CS	Scrub management Cattle herd to control growth on acid grassland	Habitats variety encouraged providing shelter to a range of wildlife Restoration of grassland from former arable use
	Upland commons	East Arken-garthdale Common (Yorkshire Dales National Park)	CS and ESA	Incorporation of CS agreement with eight farmers to reduce the number of grazing sheep in 21,000 ha land Plantation of native woodlands Enhancement of in-bye meadows and pastures under the ESA scheme	Recovery of heather and bilberry, cotton grass. Increase in the number of Black Grouse (an endangered species) from nine in 1998 to 24 in 2002
	Water Meadows	Salisbury Cathedral, Avon Valley	CS and ESA	Introduction of extensive grazing to the meadows Restoration of old sluices and 4 km of ditches over a two-year programme	Protection of existing meadows allows for diversification of flora and fauna

		Study area	Schemes in place	Management measures	Benefits (actual and perceived)
Landscape	Coastal Land	Essex coast	CS and ESA	A £400,000 grant under the CS agreement in support of various projects led by the Essex Wildlife Trust to: re-establish coastal grassland, hedgerows, grass margins Breaching of the sea wall to create 84 ha of new marsh, behind which coastal grazing is being introduced	New marshland – support of a rich mix of plants invertebrates such as ragworm, snails and bivalves Coastal grazing area will support wildfowl such as Brent geese, widgeon, redshank and lapwing
	Wildflower meadows	Crosslane Meadows, Gateshead	CS	A Joint effort with Gateshead council to re-create a species-rich grassland of the past	Over 15ha of wildflower-rich grassland recreated – the area a potential Local Nature Reserve.
Archaeology		Stonehenge and Avebury	CS	In partnership with English Heritage and the National Trust: Reversion to grassland and establishment of extensive grazing regime Introduction of Special payment rate to encourage conversion from arable to grassland Increasing habitat availability for breeding for lapwings, corn buntings and grey patridges	Protection from damage of ancient burial mounds at Stonehenge and The West Kennet Long Barrow at Avebury (a scheduled ancient monument) Growth of typical chalk downland species of flowers on chalk slopes including wild thyme, self heal etc
		Esthwaite Barn, Hawkshead	ESA	In partnership with Lake District National Park: renovation of the ancient barns and surrounding buildings to the original 16th century style	Restoration of traditional farm buildings
Wildlife		Pennine Dales (Croncrakes – a rare bird)	ESA	Upon joint advise provided by DEFRA and Yorkshire Dales National Park, careful farming of land including: A new cutting date for meadows Bird-friendly mowing patterns for ensuring survival of bird eggs	A success, though a closely guarded one due to the extreme sensitivity of the breeding location
		Padstow, Cornwall (Corn bunting)	CS	Conservation and changes in land management measures to reverse the decline in corn bunting as a result of intensive agricultural practices including: Creation of field margins to provide nesting habitats Growing of wild bird seed crops for food	Increment in number of birds yet to be quantified. Perceived benefits to wildlife species as well as protecting various archaeological sites on the farmlands

Source: DEFRA, 2004: Countryside Management & Environmentally Sensitive Areas Schemes, Annual Report 2002-03)

Environmentally Sensitive Areas schemes

It should be noted that not all of the management measures under the ESA schemes described in Table 2 have produced actual benefits which can be easily quantified as there is often insufficient time between the launch of the schemes and their survey for impacts on landscape and historical values to be accurately detected.

With respect to landscape objectives, only nine ESA schemes have been fully successful in terms of maintaining and enhancing landscape value, whilst the remaining ones were either partly successful or only able to maintain the value of the land. Over a third of land cover within ESAs falls under lower tiers, specifically related to improvement of grasslands which tend to be of low ecological interest, though they may still contribute towards landscape and historical environmental objectives. Although most ESA schemes have been successful in maintaining wildlife value, the actual enhancements have been at best partial and none of the schemes were able to demonstrate complete success in meeting both twin objectives of maintenance and enhancement (DEFRA, 2003).

Moreover, the assessment of ESA schemes has not included the level of 'additionality' achieved as a result of the scheme in place. Additionality refers to the extent to which environmental benefits would have been achieved in places in the absence of agri-environment schemes (DEFRA, 2003). This is once again due to the limited timeframe between the launch of the schemes and their survey. In such cases, the measurement of additionality would require monitoring of 'control sites', i.e. landholdings which are not under ESA agreements. However, very little of such undertaking has been recorded to date.

Countryside Stewardship Scheme

A CSS Monitoring programme was undertaken by a consortium of ADAS – a former governmental advisory service for agriculture and horticulture – the Centre for Ecology and Hydrology (CEH) and Countryside and Community Research Unit (CCRU) on behalf of DEFRA (formerly the Ministry of Agriculture Food and Fisheries) between 1997 and 2000. The programme was divided into two distinct but related modules for gauging the appropriateness and potential effectiveness of the CS scheme. Module 1 involved assessment of 484 new CSS agreements taken from each landscape type in the scheme and measuring their appropriateness, feasibility and likely environmental effectiveness. A holistic approach was undertaken, covering the potential wildlife, access and historic environmental benefits. Module 2 studied the botanical characteristics and quality of land under CSS with the aim of characterising their environmental resources by estimating the vegetation type (and hence ecological quality) of land under agreement. It was thought that the results could also provide a baseline for future monitoring of change in ecological quality (DEFRA, 2003).

The monitoring concluded that the CSS is likely to be generally successful in delivering environmental benefits. For most landscape types, the majority of sample agreements were deemed to be potentially effective in both maintaining and enhancing wildlife value. Only 10% of the agreements in all landscape types were predicted to be ineffective in maintaining wildlife interest. Similarly, in terms of the landscape benefits, the majority of sample agreements were predicted to be effective in terms of maintenance and enhancement (DEFRA, 2003). With respect to historical values, the actual enhancement was not predicted to occur on sample agreements, although on average, over 70% of agreements were deemed to be potentially effective in maintenance at best.

> 'The schemes have now become part and parcel of environmental legislation in England and Wales, as they have in many of the central and western European nations. Their enormous potential to deliver environmental benefits to both agricultural and non-agricultural landscapes cannot be overlooked…'

Thus, it can be seen that the majority of CSS appears to have achieved a high degree of success in meeting its environmental objectives both individually and in combination with ESA scheme, as outlined in Table 2. Many such successes can also be directly attributed to CSS Special Projects launched in recent years. Many of these were developed in partnership with other interested parties such as the RSPB with the intention of funding work that cannot be covered by standard CSS management options. They not only cover a wide range of issues but their environmental benefits have been well monitored and directly quantified. The DEFRA annual report 2002-03 cites the example of the Cirl bunting population, a bird species which has been declining in recent years due to changes in farming practices resulting in loss of hedges and scrub for nesting sites. A CSS special project, launched in Devon in 1992, helped restore the

declining number of this species by implementing farming strategies such as reduced application of insecticides and pesticides. It resulted in an 83% increase in the population of Cirl bunting compared to only 2% elsewhere. The RSPB linked this increase to CS scheme strategies and the Cirl bunting project has now become a flagship. It demonstrates clearly how linking agri-environment schemes to other initiatives aimed at increasing farmland birds can work.

Another prime example has been the development of cereal field margins, the strips of land between cereal crops and field boundaries (DEFRA, 2004). The land is managed in such a way as to create a network of 'wildlife corridors' around the farm. They can include habitats that provide direct benefits to a range of threatened wildlife species, not only farmland birds but also rare arable plants such as pheasant's eyes, cornflower and corn buttercup. The methods involved are designed to have no detrimental effects on the remaining cropped area.

The presence of CS schemes, with additional funding under the ERDP, greatly contributed towards exceeding the target (increasing the number of cereal field margins in the UK to 15,000 by the year 2010) eight years ahead of schedule in 2002. The resulting grass margins also provide additional benefits in the way of protection to adjacent habitats such as watercourses or woodland. They do this by acting as pollution buffers between the crop fields and watercourses (Munro, 2003).

Apart from wildlife enhancement, the projects have also made significant contribution to the restoration of historic parkland and traditional buildings – key features of a healthy environment which provides social and economic benefits for those who live and work in it through recreation, tourism and employment (DEFRA, 2003). Furthermore, monitoring of a small sample of 'control sites' has suggested that the environmental benefits delivered may have been significantly over and above what would have happened in the absence of the scheme (DEFRA, 2003).

Provision of access

A key feature of agri-environment schemes has been the inclusion of incentives for farmers and landowners to manage their land with a view to improving access to the countryside for the public, specifically for recreational and educational purposes. Under the CSS and ESA agreements, the following requirements should be included with respect to access:

i) create linear routes to make new circular walks or rides (bridleways, cycle tracks) and new links/bridge gaps in the existing rights of way network;
ii) provide access to new parts of the countryside, such as viewpoints, lakesides, archaeological sites, picnic sites or open spaces close to towns and villages (Bentlly, 2003).

Additionally CSS agreements suggest the need to provide opportunities for educational visits and to improve opportunities for people with disabilities or mobility.

At present, it is difficult to quantify the success of this opening up of the countryside, and whether the scheme-related initiatives provide value for money (VFM). Not only are there wide variations on the actual value of the access procured, but there is also little agreement as to what extent the public takes advantage of it. With respect to educational access, most CSS agreement holders were found to have difficulty in implementing their agreements, being unable to meet the requirements for six visits per year. However, for those that did take place, the public response was noted as fairly positive (DEFRA, 2003).

Overall evaluation: a critical overview

The schemes have now become part and parcel of environmental legislation in England and Wales, as they have in many of the central and western European nations. Their enormous potential to deliver environmental benefits to both agricultural and non-agricultural landscapes cannot be overlooked and their significant contribution towards achieving the vision of sustainability is difficult to ignore.

Perhaps no other policies enacted in recent years incorporate such a holistic approach towards countryside management, taking into account conservation and enhancement of such a wide variety of landscape features (these can range from lowland and upland calcareous grassland and heathland to upland Pennines and coastland) as well as providing public access to previously unreachable and unavailable parts of the countryside.

Another key feature of the schemes is their enormous potential to complement and contribute significantly to other related policy drivers. These include Areas of Outstanding Natural Beauty (AONBs) and National Parks, Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs) as well as the wider conservation and enhancement objectives under the UK Biodiversity Action Plan (BAP). The coverage of the schemes show a substantial overlap with National Parks, and to a certain extent AONBs (DEFRA, 2003). Hence the landscape and conservation benefits accrued should not solely be measured in the light of the scheme targets themselves, as they substantially reinforce similar objectives in other policy instruments. Precise assessments of the contributions made to AONBs and National Parks thus far have yet to be carried out, but there is sufficient evidence to suggest that such monitoring may be revealing.

With regard to fulfilling their objectives of conservation and enhancement, both ESA and CSS schemes have been qualified successes, given the available data at present. The ESA schemes are reviewed and resurveyed every five years. The monitoring of the initial

batch of five ESAs completed in 1996 indicated that although achieving landscape enhancement had been less successful, overall, the wildlife and conservation interest of the areas was being maintained, whereas in many areas prior to its designation, levels had been deteriorating (Feehan, 2003). This is of critical importance because, if lost or degraded, such 'green infrastructures' of open space and landscape can be very difficult, expensive or even impossible to restore.

> '…holistic and far reaching schemes such as these demand a matching monitoring regime and, until such a regime is applied, questions about the real value of the schemes cannot effectively be answered'

The CSS on the other hand appears to be more successful in achieving their objectives of conservation and enhancement, with the majority of agreements deemed to be effective in maintaining and enhancing wildlife and landscape values.

The way forward

The future of agri-environment schemes in England and Wales very much depends upon firstly, the overall level of funding, (as this directly affects the extent of uptake by farmers and landowners) and secondly the scope of different measures that are incorporated into the schemes. Other factors include the general public's perception, the success of current measures and the farmers' and landowners' willingness to take active part in enhancing their landscape value in addition to providing maintenance. Compared to other conservation management measures such as SSSIs and AONBs, the level of funding for agri-environment schemes appears to be large (DEFRA, 2003). However, the schemes are so oversubscribed that annually, over 20% of CSS applications are rejected on the grounds of budgetary constraints (Environment Agency, 2003).

One of the key government incentives to increase the uptake and coverage of the agri-environment schemes has been the establishment of an 'Entry Level' agri-environment scheme (ELS). If these pilot schemes are successful, this option will be made available to farmers in England from 2005 (Environment Agency, 2003). One of the main aims of the ELS is to make agri-environment schemes widely available and accessible.

As a policy instrument, the potential for farmers and landowners to perceive the agri-environment schemes as imposing an additional financial burden should not be overlooked. Currently, farmers are reluctant to enter some higher ESA tiers (involving enhancement and creation of new habitats) and the more demanding CSS options. They prefer instead to take up agreements in the lower tiers (around 80% of ESA land is entered into the lowest tiers) which include only maintenance and protection of traditional landscapes (RSPB, 2004). The ESL scheme can therefore potentially expand the coverage to incorporate areas of highest wildlife, landscape and historical value whilst incurring lower transaction costs to farmers (NFU, 2002).

Public perception with respect to the benefits of agri-environment schemes from environmental protection and enhancement perspective has been generally positive. A study carried out by Cambridge University and CJC consulting in 2002 on behalf of DEFRA assessed the public's willingness to pay to support agri-environment policy. The study demonstrated that the ESA scheme is highly valued by the public and the value of benefits derived greatly exceed the public expenditure cost of the schemes, although it should be noted that the policy benefits were in some cases over-stated in the surveys by the public (DEFRA, 2003).

With respect to opening up of the countryside to the public, agri-environment schemes will certainly play a substantial role in the future. Any policies designed to widen access provision will benefit and increase their use not only by traditional users such as hikers and holidaymakers, but a whole host of under-represented users including those from different cultural or ethnic backgrounds, people with disabilities and those who may be socially or economically marginalised (Flowers, 2004). From an economic perspective, widening access to large tracts of attractive countryside to the public has the potential for strengthening the rural economy and infrastructure; the investment potential from a range of business interests such as shops, hotels and restaurants are greatly enhanced. In this manner regeneration of areas such as North Yorkshire which have suffered from changes in industrial base and rising unemployment in recent decades may also be achieved.

Active participation in the agri-environment schemes by farmers and landowners is also crucial to achieving their objectives. Currently, the 'Good Farming Practice' guide included within the ERDP defines what farmers are expected to deliver, across the whole farm without the agri-environment payments. Farmers are obliged to adhere to a number of environmental regulations and verifiable standards relating to issues such as overgrazing and hedgerow management, in line with the recommendations laid out in the Codes of Good

Agricultural Practice on Water, Soil, Pesticides and Air. As such, it is critical to ensure that payments under agri-environment schemes should only be offered specifically in response to cases of farmers not being able to deliver environmentally beneficial outcomes by complying with the Good Farming Practice legislation (Edwards and Lloyds, 2003).

Moreover, for the schemes to be attractive, farmers must perceive agri-environment schemes as alternative forms of farm management that are agronomically practical as well as financially viable. They should however, be discouraged from viewing the schemes as just another form of support payment for generating revenue from land that yields marginal production and is ineligible for any other form of grant aid (Badlock *et al*, 2002). Comprehensive and relevant training programmes for farmers on environmentally friendly practices are another essential component of successful development, implementation and delivery of any agri-environment schemes. Such training would build upon local knowledge and experiences related to environmentally friendly methods whilst developing revised schemes. It could do this through either a local 'trainer' or other measures such as workshops involving the skills and expertise of a range of stakeholders such as local NGOs, scientific staff and countryside advisers.

Conclusions

The agri-environment schemes mark a significant step towards achieving sustainability of the countryside. Although quantifiable environmental benefits of the schemes implemented thus far are limited, and have been too few and far between to declare their effectiveness robustly, the evidence presented from the programmes is on the whole positive and shows that substantial environmental benefits accrue. It is important to promote agri-environment schemes as an integrated package of rural development measures designed to ensure a more viable and sustainable future of farming. This would also require clearer identification of social, economic and environmental benefits resulting from such approaches than is currently available. In essence, holistic and far reaching schemes such as these demand a matching monitoring regime and, until such a regime is applied, questions about the real value of the schemes cannot effectively be answered.

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HAVING YOUR CAKE AND EATING IT: ECO-JUSTICE VERSUS DEVELOPMENT

Is it possible to reconcile social and economic equity, ecological sustainability and human development? **ROLF JUCKER** examines some potential answers and the implications for education and sustainability

It is impossible to look at educational issues before we develop a clear understanding of the dominant ideologies that currently perpetuate unsustainability. Only if we appreciate the pervasiveness and the fallacies of such concepts as 'development', 'growth' and 'progress' within a limited biosphere can we start to see what eco-justice might mean: equitable sharing between all human beings, the natural world and future generations. This, then, has stark consequences for our Euro-American lifestyles and should make us look to indigenous and/or vernacular societies for prompts for a good, yet non-commodified life. On the basis of such an analysis, we can then proceed to formulate some fundamental parameters for eco-justice education, the most important one being that tutors have to embody the eco-justice principles they are likely to advocate to their students. This four-part approach is reflected in the structure of this article.

Introduction

To solve the problems of an unjust and unfair world order we need to 'live simply so that others may simply live.'
(Kumar 2000, 3, quoting Elizabeth Seton)

I would like to begin by taking issue with the question of whether it is possible to reconcile social and economic equity, ecological sustainability and human development. Although it is based on highly dubious, albeit very prevalent assumptions, I have decided to let this question guide my discussion because I have come across many average, well-meaning, normally 'informed' Euro-American middle-class people who responded in this way when confronted with the concept of sustainability. The ubiquity of the response also highlights the amount of work education for eco-justice (or, if you prefer, education for sustainability) still has to do.

The question presupposes that there is, in reality, a conflict between social and economic equity, between ecological sustainability and human development. I will attempt to show that this is not necessarily the case, unless you subscribe to a very specific ideology. However, one should not harbour any illusions about the world view that informs such assumptions; it is the globally dominant one and still informs mainstream thinking in economics, the media, education and managerial environmentalism. It has become, in essence, as conceptually invisible as water to the fish and air to the birds.

1. Every human being has a right to be an Euro-American consumer

'It is no longer enough to live; it is necessary to consume.'
(N'Dione et al. 1998, 369)

Let us start with the relatively new notion of development. I am quite conscious of the fact that any of the 'teachers of wisdom' quoted below will have viewed the world from a particular, in all likelihood class-specific vantage point. Nevertheless, the following statement seems to be an acceptable generalisation for the period up to the twentieth century:

'Having much obstructs living well […] Teachers of wisdom in the East and West […] almost unanimously recommended adherence to the principle of simplicity in the conduct of life. That cannot just be a matter of chance. Summarising the experience of generations, they drew the conclusion that the way towards a successful life seldom involves accumulation of possessions.' (*Greening the North* 1998, 126)

Yet after World War II this all changed – at least in the North and the North of the South. When US President Truman introduced the notion that there are developed and underdeveloped nations in his inauguration speech before Congress on 20 January 1949 (see Sachs 1999, 3-4 and Lummis 1996, 59) the Enlightenment idea of progress had found its ultimate metaphor. From then on all human endeavour would be judged against it: a never ending, sharply upwards pointing linear development path with the 'American way of life' as its pinnacle (see Esteva 1992). On the back of military superiority, global economic dominance, technologies which allowed exponential growth in materials throughput, and production/consumption based on increased and worldwide resource exploitation, the ideal was suddenly a life as rich as possible in material possessions. Even for the USSR, the erstwhile arch enemy of the US, the avowed aim became to 'overtake' the States in the development game. Teodor Shanin talks of 'the overriding nature of the idea of progress, whatever party politics involved' (Shanin 1998, 68), and Herman Daly simply observes that 'Growthmania is ecumenical' (Daly 1973, 150).

In under a quarter of a century, it became clear in the early 1970s that there was no relative fit between growth and the Earth's carrying capacity (see *Toward a Steady-State Economy* 1973). Nevertheless, there is ample evidence that the dominant thinking in the decades since

then still advocate development as economic growth. Even the 'Rio Declaration on Environment and Development' from 1992 talks of the 'right to development' (Principle 2) and the 'sovereign rights [of states] to exploit their own resources' (Principle 3) and, in a retrospectively rather stark display of neoliberal ideology, explicitly equates 'economic growth' with 'sustainable development', warning that environmental concerns should not restrict 'international trade' (Principle 12) (quoted in Johnson 1994, 118, 120).

There was a decisive policy shift under Reagan and Thatcher towards unregulated 'free markets' and 'free trade'. None of the subsequent regimes in the US or UK have backed away from this agenda which 'opened up huge sectors of the Southern economies to transnational corporate investment, accelerating the flow of resources to the North and exacerbating environmental destruction' (Karliner 1997, 25), a process usually called globalisation, but more aptly termed 'recolonisation' (*ibid*). This neoliberal ideology 'contends that unleashing market forces to promote ongoing economic growth through open and competitive trade is the fundamental prerequisite for sustainable development' (Karliner 1997, 41).

Unfortunately, these are not just lofty theories, but the ideological parameters which actually drive international development policy, as this quote from a report by the International Monetary Fund (IMF), published in 1994, shows:

'The experience of developing countries that have fostered macroeconomic stability and implemented structural reforms shows the way forward for the low-growth countries. […] For low-growth economies, substantial further progress will be required in liberalising trade regimes and improving the efficiency of agricultural sectors. As the process of further integration of the world economy gathers pace […] countries will need to adopt outward-oriented policies to share in global efficiency gains and to reduce their vulnerability to adverse external developments.' (IMF 1994, 66)

Here we have the mantra which Southern countries had to listen to for the last twenty-odd years: they need growth, macroeconomic stability, 'structural adjustment' (meaning trade liberalisation), technological import from the North to improve efficiency, opening up of their markets, for the 'goal' is … ' sustained economic growth' (*ibid*). No amount of debt relief will hide or change the assumptions behind this mode of thought.

Even though the IMF might be much more dogmatic about this than the World Bank, it is equally apparent that for the dominant discourse, development as economic growth is considered the only choice. Furthermore, those who presuppose that the economy as currently organised is the most important overall factor do not have a problem with the original question as posed because financial capital will replace any amount of natural capital. This model also assumes that economic wealth will eventually trickle down and lead to social equity, so that everybody gets a sizeable piece of the ever growing planetary chocolate cake.

2. Out of this world

'The utilitarian and productivist paradigm of development is like a telescope through which the West sees only itself, when it thinks it sees the Third World. It cannot do otherwise because it is an instrument made to measure itself and no one else.' (Zaoual 1998, 38)

Can this prioritising of growth and the underlying assumptions that every nation has the right to unlimited progress and unrestricted exploitation of natural resources – and, by extension, that every person has the right to unlimited consumption – stand up to closer scrutiny?

The first fallacy of this approach is the assumption that unlimited expansion is possible, in other words that the economic sphere can have primacy over any other sphere. This is not so. The 'thermodynamically closed and non-materially-growing' life-support-system Earth (Costanza *et al.* 1996, 2) is the sphere on which everything else depends. It is the most fundamental aspect, defining the possibilities and limits. In Shiva's words: 'The real meaning [of sustainability] refers to nature's and people's sustainability. It involves a recovery of the recognition that nature supports our lives and livelihoods and is the primary source of sustenance.' (Shiva 1992, 192) Contained within nature, therefore, we find empowerment, equity, and economy, while equipment – as in science and technology – as the fourth element (see figure 1).

Or, phrased differently, there is no life without nature as the support system, no economic activity of whatever sort. This means that the economy is always a subsystem of nature, and not the other way round, as the dominant discourse would have it. E.F. Schumacher clearly pointed out this dependency structure more than 25 years ago: 'Modern man does not experience himself as a part of nature but as an outside force destined to dominate and conquer it. He even talks of a battle with nature, forgetting that, if he won the battle, he would find himself on the losing side.' (Schumacher 1993, 3)

All this has some clear implications. Fundamentally, it means that we, as nature's creatures, depend for our survival on its survival. It follows that we not so much have rights over natural resources, but responsibilities to safeguard the continual availability of these resources for future generations. The notion of stewardship, as described by Nebel and Wright, expresses this well:

'Modern-day stewardship, therefore, is an ethic that provides a guide to actions taken to benefit the natural world and other people. […] Stewards recognise that a

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trust has been given to them and that they are responsible to care for something that is not theirs – whether it be elements of the natural world or of human culture – which they will pass on to the next generation.' (Nebel and Wright 2000, 11)

What consequences does this have for our choice of lifestyles? Do we have an automatic right to whatever lifestyle we fancy? If we start from the assumption that 'all human beings are born free and equal in dignity and rights' (Article 1, The Universal Declaration of Human Rights) eco-justice can only prevail if all of us get a comparable piece of the planetary chocolate cake. Because this cake is of a given size, it follows that the pieces cannot exceed a given size. Evidently, the exact size of the pieces will vary according to geographical, climatic and cultural differences, and there is no implication that the make-up of each piece has to be the same. But on a planet with biophysical constraints there is clearly an upper limit to one's piece. Overstepping this limit will inevitably eat into and reduce someone else's piece. This does mean that a lifestyle that is based on amassing material possessions and sees the meaning of life in consumption cannot, in reality, be sustainable. However efficient we are, whatever fantastic technologies of minimal resource use we might develop in the future, a closed system will at some point cry 'That's enough!' if we don't adjust accordingly:

'…what really matters is the overall physical scale of the economy with respect to nature, not just the efficient allocation of resources. Herman Daly has offered a telling comparison: even if the cargo on a boat is distributed efficiently, the boat will inevitably sink under too much weight – even though it might sink optimally! Therefore, efficiency without sufficiency is counter-productive – the latter has to define the boundaries of the former. […] Nothing is ultimately as irrational as rushing with maximum efficiency in the wrong direction.' (Sachs 1999, 88)

The sufficiency revolution advocated here is, in essence, nothing other than the old question of the good life. In other words: how can we achieve the best possible life – not the highest possible living standard, but the best quality of life – for the greatest number of people within the Earth's limits?

If we take this one step further and look at tools which try to measure human impact on the biosphere, such as the ecological footprint, we can clearly see that the 'Euro-American way of life', advocated as the goal of the 'development model', is unsustainable. Currently, if equitably shared, every person can make use of an average ecological footprint (total ecological productive area on Earth divided by number of inhabitants) of roughly 2 hectares (including sea space). Quite apart from the fact that this figure is steadily shrinking due to the loss of productive areas and the increase in population, it means that:

- 20% of the world's population occupy around 70% of the global footprint. Because the total global footprint is, according to a conservative estimate, 37% larger than all the ecologically productive areas combined, the wealthiest 20% alone occupy a footprint as big as the planet's total carrying capacity: 70% of 137% is nearly 100%.
- Since the average American has a footprint of 9.6 hectares, we would need an additional four planet Earths to provide the resources, should, as current ideology has it, the entire global population want to lead a similar lifestyle.

This suggests that we have to foster new ethical values – which, for the most part, are in reality very 'old ideals of a livelihood based on love, conviviality and simplicity' (Rahnema 1992, 127) which we in Euro-American societies have forgotten during the last two hundred years. In the words of C.A. Bowers: 'Long-term cultural/ ecological survival will depend, in part, on our collective ability to accumulate, communicate, and renew ecologically

sustainable forms of knowledge and values.' (Bowers 1995, 135). Such values include quality of life rather than consumption, immaterial instead of material principles, co-operation instead of competition, self-limitation instead of greed, joy rather than jealousy, community instead of egoism, pleasure instead of insatiability, a long-term rather than a short-term perspective, partnership rather than victory, solidarity instead of confrontation, wisdom instead of profit (see Zukunftsfähiges Deutschland 1996, 208; Factor Four 1997, 292-293), and most importantly perhaps, humility in the sense of 'tolerance and deep respect' (Forbes 1992, 47). In other words: 'External sustainability is contingent upon finding more non-material ways of seeking to satisfy desire', i.e. 'internal sustainability' (Maiteny 2000, 358, 345).

Yet saying that humans are not free to choose any lifestyle or development path they want (because effectively an individual's freedom has its limits in the freedom of and the bio-geochemical limits of the biosphere), raises serious ethical questions. As one student of mine put it:

'It is any person or country's right to act as they wish, in development, in progress, and if that means cutting down vast amounts of rainforest so be it… that is their right. The fundamental question that I have is: Who are we to argue against this?'

A satisfactory answer to this question has to be on various levels. I hope to have already made clear that, in fact, nobody has such a right. If we are just stewards of the Earth we have no right to destroy the resource base of other people, other species or future generations. In other words, if there is to be eco-justice we will have to learn to live within a personal footprint that is sustainable and globally equitable.

At this point the objection is usually: it is all very well for a rich Euro-American to say this, living in luxury, free of wants, but haven't the poor of the world got the right to live like you as well? To which I can only respond: yes and no.

I have argued that nobody has a right to live over and above their fair share of equitable distribution. Euro-Americans and the rich elites of the South are continuously living far beyond their fair share, as we have seen: they appropriate alone nearly all the reproductive capacity of the planet. The first and foremost priority therefore has to be to combat and reverse the overdevelopment of the industrialised countries.

'Both the crisis of justice and the crisis of nature necessitate looking for forms of prosperity that would not require permanent growth, for the problem of poverty lies not in poverty but in wealth. And equally, the problem of nature lies not in nature but in overdevelopment.' (Sachs 1999, 89)

Jack D. Forbes puts the spotlight on this when he notes that ironically 'those peoples and human beings tend to be categorised as 'underdeveloped' and 'uninteresting' who do not subjugate others and who do not accumulate vast amounts of stolen goods' (Forbes 1992, 15). This requires that we in Euro-American countries adopt what Sachs called the 'home perspective' (Sachs 1999, 86-89), i.e. rather than shifting the blame onto 'the others' we should finally face up to the fact that our own lifestyle is not and cannot be sustainable and therefore cannot under any circumstances be a model for the rest of the world. On the contrary, we need models that allow us to reduce the impact of our lifestyle by a factor of two to five in order to become sustainable.

This is the uncomfortable conclusion not only for the saturated upper-middle classes and the rich of the world, but also for all those who aspire to attain a similar lifestyle. For the rest, it implies clearly that the 'development model' doesn't work, without even taking into account the devastation wrought by 'development' programmes in the South (see The Post-Development Reader 1998, 207-273, or, for a recent account, Thiessen 2002). And therein lies a problem: the industrialised countries have to tell the 'underdeveloped countries': 'Don't attempt what we have done, it doesn't work!' This message will only be convincing, though, once we can show that we in the rich countries have kicked the drug habit of overconsumption and overdevelopment. Refraining from saying it for fear of being seen as moralising would be equally wrong, because there is ample evidence that the message, though unpalatable, is true.

Let me cite the two main reasons why the Euro-American model doesn't work in a fair and just world. Firstly, it is not replicable because it is historically built and still relies on the continued exploitation of natural resources and human capital in the colonies or the South:

'…it is a catastrophic mistake to think that the Third World today can be expected to mirror Europe and the US when it was the Third World which helped make Europe and the US what they are. Indeed, it is the nature of the world capitalist system, its origins and evolution which created the exploitative paradigm of centre/ periphery which lays the basis for today's world. (Manley 1991, 70)

There is no question about this: the rich need the poor to sustain their overconsumption: American corporations depend '…on the poorer countries for 100% of their diamonds, coffee, platinum, mercury, natural rubber, and cobalt. They get 98% of their manganese from abroad, 90% of their chrome and aluminium. And 20 to 40% of certain imports (platinum, mercury, cobalt, chrome, manganese) come from Africa.' (Zinn 1996, 556-557)

In order to succeed with the mirror approach, the South would therefore need another 'South' as base for the human and natural exploitation necessitated by the 'Euro-American way of life'. In other words, rather than, as the neoliberal dogma would have it, leading weaker players 'to catch up' (IMF 1994, 65), the development

model increases dependencies (such as on world market prices for commodities or buyer markets in Euro-American countries for aid, etc) and inequalities, leading to wealth transfer from South to North, including a massive brain drain (see Taking Nature into Account 1995, 132-136). Says Onimode:

'An equally important lesson from the 1980s is the urgent need to arrest the increasing net outflow of resources from Africa to the North. It is perverse and scandalous that poor Africa should subsidise the opulence of the advanced capitalist countries.' (Onimode 1992, 129; see also George 1998)

Additionally, it is difficult to see how economic equity could ever be achieved without social equity and *vice versa*. I would argue that within the present system there is clearly a conflict between social equity and economic growth, because the economic system, on which current growth rests, is inherently and increasingly unjust. Or, as Frank put it: 'the capitalist system generates economic development for the few and underdevelopment for the many' (quoted in Peet 1991, 47).

The second reason why the 'Euro American' model does not work is that even the exponentially increased material consumption in 'successful' countries has not produced 'the good life': Index of Sustainable Economic Welfare (ISEW) calculations for the United Kingdom show that quality of life has been declining since 1973 and by now has nearly fallen to the level of 1960 despite growing Gross National Product (GNP) – and all this with strong population growth. In the US, the ISEW has stabilised since about 1970; calculated per capita it has been falling since 1980. In Italy as well, the gap between GNP and quality of life is growing, as the Worldwide Fund for Nature (WWF) has shown. Even though ISEW and GNP were roughly the same in 1960, today's ISEW is equivalent to Italy's GNP of 1970. (Wackernagel/Rees 1997, 130)

Why is it, we might wonder, that 'research into the psychology of happiness can find neither within nor between societies any evidence that levels of satisfaction significantly increase with levels of wealth'? (Sachs 1999, 210) On the contrary: research confirms the age-old truism that money does not buy happiness. Describing the US over the past four decades, psychologist David Myers says: 'We've got twice as many cars per person, we eat out two-and-a-half times as often, we enjoy all the technology that fills our lives. Yet we're slightly less likely to say we're very happy, we're more often diagnosed with depression… the divorce rate has doubled, the teen suicide rate has tripled, the juvenile violence rate has quadrupled.' (Ellwood 2000, 12)

Taking everything into account, we therefore come up with the answers humankind has given time and again: simplicity, respect for nature, the others and oneself, humility, love – and 'self-activity' rather than consumption (see Bennholdt-Thomsen and Mies 1999, 56).

There is even quite a bit of evidence that subsistence economies, so utterly despised in so-called developed countries as backward and unworthy, produce a 'strong correlation between a modest life and happiness' (Vester 1997, 457; see also Norberg-Hodge 2000, 9-87). On the basis of what we have seen so far, this is not surprising, because, without wanting to idealise them, subsistence economies seem a rather successful approach to guarantee extensive self-determination of the people involved, largely free of external control (see Bennholdt-Thomsen and Mies 1999).

3. Alternative models

'Come, then, comrades, the European game has finally ended; we must find something different.' (Fanon 1967, 251)

This 'problem' in the North is also part of the good news for the South. The poor masses do not have the difficult task of kicking the overconsumption habit. They have two advantages over people in Euro-American countries or the rich elites in their own countries that bring them much closer to a sustainable lifestyle. Firstly, they can learn from the drastic mistakes made by the industrialised countries – entirely commodified lives, centralised and bureaucratic societies, lack of real self-determination of people over their lives, to name but a few – and focus on the basis of that knowledge on better alternatives. In the words of Charlene Spretnak: 'A true escape from humiliation would entail sustainable development that wisely avoids the alienation, social crises and ecological degradation that plague the modern West' (Spretnak 2002, 30). Secondly, because they often are still closer to less commodified ways of life they might be far better placed to tap into the rich reservoir of human knowledge, often from indigenous peoples, about ways of life that tread lightly on earth. Kothari has spelt it out clearly: if the aim is truly 'self-rule of the people' (rather than the creation of a rich elite in Southern countries) we will have to learn to 'draw upon time-tested traditions and knowledge systems' and 'community lifestyles and ecologies that had survived for centuries' (Kothari 1993, 86). For most of us in Euro-American countries, this heritage has been lost and will have to be re-learnt and unearthed at great cost.

It is therefore not surprising that criticisms of the 'development model' are gaining ground in the South as well as the North. Not only that, models of sustainable lifestyles can also be found all over the world. Whether we look to indigenous people like the Ladakhis (Norberg-Hodge 2000) or Andean peasants (Apffel-Marglin 1998), to Kerala (McKibben 1997, 117-169) or to all the places where people fight to retain their subsistence approach (Bennholdt-Thomsen and Mies 1999) or whether we see the attempts to evade the 'development model' (The Post-

Development Reader 1998, 277-376) and all the intentional communities deliberately adopting a light impact on Earth (Schwarz and Schwarz 1998), all 'these vernacular spaces' share common characteristics which are crucial to sustainability: 'minimisation of risks, ecological vigilance, the diversification of resources, prudent attitudes towards innovation and the multi-dimensional aspect of all life's activities' (Rahnema 1998, 114). Without doubt we will have to look very closely at these vernacular societies in order to find food for thought for the necessary lifestyle changes in Euro-American countries, particularly since we have more or less obliterated our own indigenous heritage.

This is not intended as an idealisation of indigenous or vernacular societies. Such generalisations are not very helpful and it would be clearly wrong to suggest that all indigenous societies were/are sustainable and just societies. Nevertheless, the research quoted above does indicate that many indigenous societies do fulfill most of the parameters crucial to sustainable societies and therefore provide important educational material for us, which we should research carefully, rather than reject out of hand.

4. Eco-justice education as a solution?

With regard to eco-justice education, we face an altogether more difficult challenge. For the world's upper- and middle-classes – which we have identified above as the real offenders when it comes to overdevelopment and overconsumption – vernacular societies, and therefore sustainable lifestyles, are beyond their field of perception. I would argue it is literally unthinkable for the global consumer classes to accept that such peoples should be their new role models.

Eco-justice or sustainability education therefore has the rather grand task not only to turn the unthinkable into mainstream views but also to jump the barrier between expressed values and living practice. After all, education is, together with the economy, the media, the social sphere and the political system, one of the belts which transmit ideologies and lifestyles from one generation to the next. Unless education becomes 'sustainable education', as Stephen Sterling calls it (Sterling 2001), there is little chance that we can manage the transition to eco-justice. What are, then, some of the fundamental educational parameters we need to take on board to facilitate such a transition?

1. Educators as role models and learners: If educators want to make progress in turning Euro-American societies into something more just and sustainable, no amount of preaching to students, no amount of writing and arguing will do. If the tutors do not change themselves and their lifestyle to be role models for the students and their communities alike – akin to the function of elders in indigenous societies – there will be no transformation. Gandhi's dictum is here as relevant as ever: 'if we desire [that] change, we must first change ourselves' (Gandhi 1999, Vol. 24, 22). But this clearly implies that the educators first have to educate themselves with regard to eco-justice and sustainability before they can think of empowering their students.

2. Eco-justice education needs to enact change here and now. The above also means that we need to live and be that change here and now in our setting. This is a local issue, which shouldn't be delegated or deemed unimportant in the face of global challenges. Change will never come about if we continue to dream and fret about global changes, world summits and international agreements: change happens, as Ivan Illich observed, by 'becoming fully present to those close enough to touch' (Illich and Rahnema 1998, 108). This, interestingly enough, correlates with Rahnema's observation that vernacular societies are 'generally formed by communities with a limited number of members' (Rahnema 1998, 113). In other words, the close involvement of any educational practice into the local community is essential.

3. Critical thinking: This is an important meta-skill: 'students need to be able to think critically about the nature of knowledge, and about the ways in which knowledge is produced and validated' (Jones *et al.* 1999, 350). This ability is crucial because in eco-justice education pupils and students will not be able to retreat, as it were, onto the familiar and safe territory of any discipline they might study. They will have to become confident in inter- and trans-disciplinarity, in assessing processes and solutions which take their elements from many different disciplines. Examples of this can be found when they learn to clarify 'the nature of the ideological and economic forces that are perpetuating the domination of the South by the North' or to revitalise 'non-commodified forms of knowledge, skills, and activities' in order to enable them 'to participate in mentoring relationships that will develop their talents and interests, and to experience other community-centered non-monetised relationships and activities that will develop a sense of responsibility for the well-being of the community' (Bowers 2003, 18).

4. Experiential learning: reconnecting to reality. Education has become ever more specialised and theoretical, far removed from the messiness of real life. Eco-justice education will therefore have to try to find real life problems and actual experiences as learning situations to avoid the kind of reductionist 'solutions' which we have witnessed since the Industrial Revolution (for examples, see Jucker 2002, 296-297). 'Experiential learning is based in messy reality, with all its paradox and untidiness, its ever-changing pattern, its refusal to conform to our expectations. As such, it inevitably leads to humility.' (Norberg-Hodge 2000, 190)

5. Reconnecting to a sense of place: The last 30 years of environmental education have shown that lecturing to

pupils and students does indeed increase environmental awareness, but unfortunately this awareness does not automatically translate into sustainable action. On the other hand, it has equally been shown that change does take place if the fundamental values held by people are in tune with justice and sustainability. Only if you know something, love it, have an interest in it and develop responsibility towards it, will you care for it (for example the local beach or environmental justice for disadvantaged peoples) (see Jucker 2002, 259-269). If we therefore want students to act sustainably, rather than turn into highly informed cynics, 'we need to confront the fact that young people and adults are increasingly being isolated from direct contact with nature.' (Plant 1998, 17) Eco-justice education will need to reconnect them with nature and the real world, and develop their sense of belonging to a place and community.

6. Empowerment of the learner: If we are serious about the empowerment aspect of eco-justice (i.e. that people everywhere should be (re-)enabled to take control over all aspects of their lives), that surely needs to be reflected in the pedagogical approaches and apply to students as well. The teacher's role should therefore be to act as 'a catalyst for the discussion and re-evaluation of human values and practices, not simply to pass on extant 'naturalised' knowledge.' (Plant 1998, vii) This means that the 'ownership of the knowledge' should not be exclusively with the teacher. Indeed, students should be given the 'opportunity to participate in the construction and transformation of the study materials in ways that are meaningful in the particular socio-political contexts in which they live and work.' (Plant 1998, 110)

7. Learning for action: If the above analysis is correct that a) we need to move towards eco-justice and sustainability, and b) our current situation is unsustainable, any learning that doesn't lead to individual behavioural and therefore social change is not successful. Yet this social change cannot be prescribed: eco-justice education itself should develop the capacity for change, rather than imposing a particular type of change on pupils or students.

8. Systemic learning: To approach sustainable/eco-justice education, Sterling has shown that we need 'a third learning level', namely 'transformative learning or epistemic learning' (2004, 55). This refers both to the fact that we need to learn to see things differently, i.e. as whole systems, rather than in a reductionist way, as well as to the necessity of developing enough reflective distance to understand how the whole system works.

Conclusion

I hope this article has made the following clear. Before we can even engage in meaningful eco-justice education, we have to analyse the current state of the world and the ideologies that perpetuate it openly and self-critically. Only if we know the parameters within which just and sustainable human activity is possible, can we create the educational tools and strategies fit for the purpose.

In a second step, it seems highly important to me that we shape our methodologies and pedagogical approaches in such a way that they reflect eco-justice in content and process; hence my eight points above. They form a useful template to drop over existing sustainability education to reveal potential obstacles and shortfalls in our current efforts and I urge readers to attempt this as an active response to this writing. After all, there seems little purpose in lecturing students about eco-justice or democracy in an unjust or authoritarian educational set-up and/or manner.

This, of course, is quite an undertaking, for it means that we – at least the majority of us in Euro-American countries – need to de-learn ourselves, and if necessary enable our students to de-learn, the deep-seated ideologies of consumerism, individualism, growth, development and progress and re-learn the central values of many vernacular societies: to live well with little, in humility and with respect, within a community of human and non-human relations.

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BREATHING SPACE: AN OVERVIEW OF THE CONSULTATION FOR LOCAL AIR QUALITY MANAGEMENT IN ENGLAND

Given the complexity of air quality management, how do Local Authorities in England make sure that all their stakeholders grasp its importance?

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have been looking closely at how consultation is taking place

This paper covers research that is focused on a large scale nationally mandated, but locally implemented science communication exercise on air quality undertaken by local authorities (LA). The research is being carried by the Air Quality Management Resource Centre and the Graphic Science Unit at University of the West of England, Bristol to investigate the methods of consultation used by LAs when undertaking their duty to review and assess air quality.

This requirement is widely referred to in the UK as the Local Air Quality Management (LAQM) regime, and is mandated under the part IV of the Environment Act 1995 (HM Government, 1995). This legislation requires LAs to assess whether health-based Air Quality Objectives (AQOs) are likely to be met at the local level. If not, and members of the public are exposed to the specified air pollutants, LAs are required to declare Air Quality Management Areas (AQMAs) and implement Air Quality Action Plans (AQAPs) in order to secure AQOs.

The ongoing air quality review and assessment process represents one of the largest locally based science policy and science communication initiatives ever undertaken in the UK. Schedule 11 of the 1995 Act highlights the requirements for consultation with governmental and public bodies and according to government advice, LAs may have a number of public consultation opportunities in a full round of LAQM (DEFRA & National Assembly for Wales, 2003). Whether these are seen as challenges or opportunities, it is important for LAs to ensure effective internal collaboration with other departments and ensure appropriate consultation with stakeholders and the public.

Research methods

In March 2005, questionnaires were sent to 353 English LAs, for the attention of the Environmental Health Officers (EHOs), to survey the current practice of consultation on LAQM related issues and the communication strategies used for that consultation. The questionnaire was designed to understand how different methods of consultation are used by local authorities and received by stakeholders (including the public) involved in LAQM. Data from the questionnaire survey will be used to illustrate patterns of communication in English LAs.

This paper focuses on an examination of the consultation strategies and approaches chosen by LAs in carrying out LAQM consultation and to identify whether different strategies were used to consult different stakeholders (governmental bodies and members of the public). A detailed review of the project and methodology is available at *http://www.uwe.ac.uk/aqm/esrc*. A more detailed statistical analysis will be carried out according to administration type (district, metropolitan, unitary or London authority) and whether the LA currently has an AQMA.

Preliminary results and discussion

The results presented here portray how consultation on LAQM related issues have been conducted by responding LAs. Information derived from the questionnaire survey includes the LAs' information on which stakeholders were consulted, which element of LAQM work was consulted on, the importance of stakeholders' views (in the opinion

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of the respondents) and which factors are considered important for successful LAQM consultation. The questionnaire survey has identified stakeholder groups consulted and consultation initiatives used by LAs. The exercise has also provided significant insights into how LAs are communicating with other stakeholders and their opinions of the consultation process.

In order to exercise their statutory duty for undertaking LAQM consultation, LAs employ a number of risk communication methods, including workshops or meetings, the use of questionnaires, information provision, public meetings, focus groups and citizen panels. In terms of consulting internal stakeholders, governmental bodies, and the public, the majority of survey participants, over 90%, opted for 'one-way' communication strategies (i.e. information dissemination) whilst 60% of LAs chose consultation through workshops/meetings. Other 'two-way' strategies (active participation) such as public meetings (29%), focus groups (25%) and citizen panels (14%) were less favoured by LA respondents. Consultation through workshops/meetings with internal stakeholders only was chosen by 27% of survey participants whilst 15% used this method for both internal stakeholders and the public. A more detailed analysis is required to identify the relationship between the choice of consultation method and target stakeholder audience.

The UK National Society for Clean Air (NSCA) informal guidance on consultation (NSCA, 1999) identifies three main drivers influencing approaches to the LAQM consultation processes. These include:

- formal requirements flowing from the legislation and guidance;
- the general push towards enhanced consultation practices in a number of deliberative arenas; and
- best practice consultation exemplars i.e. good information provision, active engagement with, and enfranchisement of, all stakeholders throughout the process.

At present, preliminary results of the questionnaire survey cannot provide a clear indication of which factors are the most significant in the context of LAQM. However, one thing that has become clear is that a difference in consultation practices seems to have emerged between those LAs with and without AQMA declarations. Further analysis is required to confirm this initial finding.

In providing accessible air quality information to the public, the Internet was the most preferred option (90%), followed by information in local newspapers, leaflets to residents, and local libraries (around 40% for each option). When asked whether LAs evaluate the effectiveness of their consultation methods, nearly 90% had not. Furthermore, the majority of responding Environmental Health Officers had no formal training relating to LAQM consultation.

Conclusion

Data from the questionnaire survey have provided an initial map of consultation approaches used by LAs on the basis of information, consultation, and participatory communication. The data indicate the types of communication methods used and the extent of their use by English LAs whereby a 'one-way' communication strategy i.e. supplying information, is predominantly used by LAs in the context of LAQM. This model of communication does not allow for the integration of all LAQM stakeholders' views (including the public) and to give maximum contribution to the ongoing Review and Assessment process.

Initial research findings suggest little difference between the methods used to consulting with 'lay' publics or when consulting stakeholders within LA or other governmental bodies. A more detailed statistical analysis of the questionnaire survey will be undertaken and a discrete series of case studies will be selected to interrogate, in greater depth, the dialogical relationship between LAs' LAQM risk communication strategies and stakeholders' response to those strategies. Case study selection is based on a number of criteria, which include whether a LA can contribute to the overall understanding of LAQM and the consultation process.

The questionnaire also identified a lack of support for LAs in carrying out LAQM consultation. Knowledge and information gathered from the questionnaire and the future case studies will be disseminated to local authorities in the form of best practice guidance on LAQM and consultation, and regional seminars. The guidance will address problems highlighted by local authorities and information on how to overcome these problems through examples of best practice. Local authority officers will also be able to attend regional seminars on the issues highlighted by the research.

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WEB WISE

This issue, we highlight the new website created by the **STUDENTFORCE FOR SUSTAINABILITY** for the IES, which focuses exclusively on those planning an environmental career

Address
http://www.environmentcareers.org.uk

Date accessed
30 July 2005

Intended audience
Anyone planning a career related in some way to environmental issues. The structure and contents of the site assume that the reader is a higher education graduate or undergraduate.

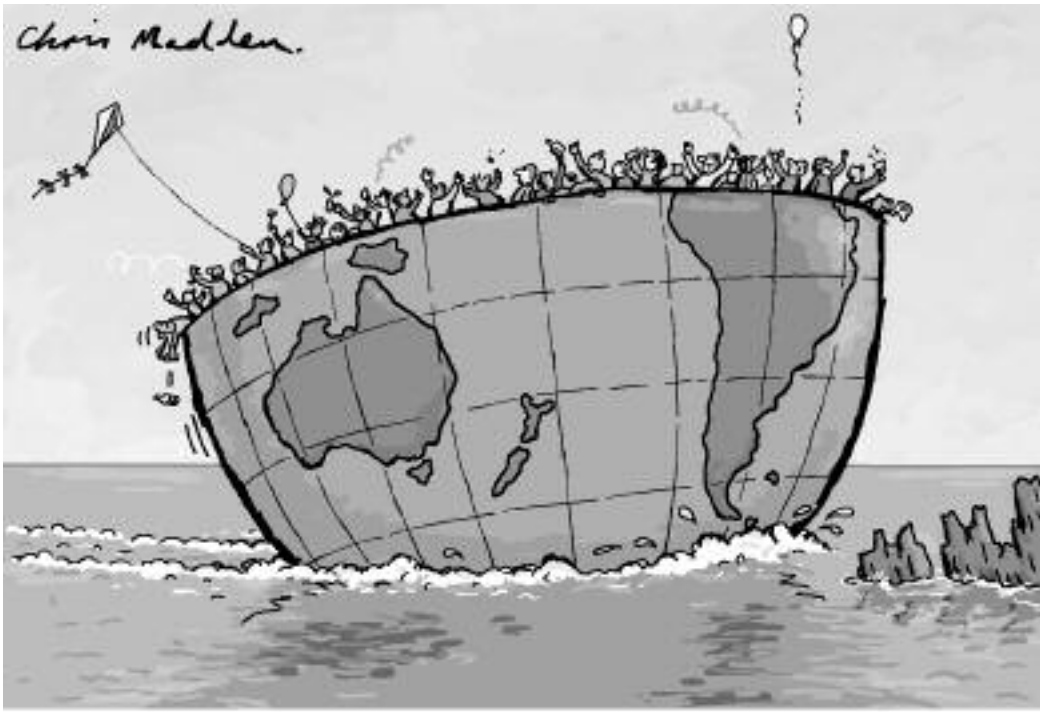
Design/ease of use rating 8/10
A clear and very easy to use site, with a single but highly visible navigation bar on the left-hand border of the screen, equipped with drop-down menus. If drop-downs drive you bonkers, you can always click on the site map and navigate on the hypertext links from there

There is no obvious indication of the date the site was last updated but there is a clear statement of what the site is and what it sets out to do at the top of the Home Page. (You'd be surprised how many organisations forget to do this and how difficult it is to tell what they actually do as a result.)

The pages accessed by ES were relatively clean in terms of design, with an easy to read sans serif face (it looked to be Arial, set at a default 12pt size), black text out of light blue background panelling, framed by the website banner and navigation bar. These last two elements were constantly on display, leaving the active page area appearing somewhat cramped at times. The overall look and feel displays the site's parentage as it shares the same designers as the new-look IES site.

With a lack of dancing sponsorship logos, animated banner advertising and annoying pop-up appeals to instant consumer gratification, the site is suitably sober. This will be seen by the target audience as either a welcome oasis of calm in the hysteria that is the modern web or a signal that the site is WBB (worthy but boring). ES reckons that the designers have got a difficult balance right. After all, how seriously would you take careers advice from someone who wore a clown suit and simultaneously tried to sell you travel insurance and a mobile phone ringtone?

The use of graphic devices on the site was sparing but eclectic – enough to add interest but not enough to grind page download times into the half minute duration, even for the most elderly of non-broadband PCs.



The ship of fools and the rocks of short-term economic planning

NEWS

New Chief Executive for the Society for the Environment

On 1 September 2005, Dr David Hickie will take up his post as the newly appointed Chief Executive of the Society for the Environment (SocEnv), succeeding Dr Tim Bines. Dr Hickie joins the Society with a wide range of experience in different aspects of the environment through his involvement at senior levels in the Environment Agency, English Heritage and Severn Trent Water.

As a constituent body of SocEnv, the IES welcomes Dr Hickie aboard and looks forward to a long and fruitful working relationship.

PP4SD progress

Professional Practice for Sustainable Development (PP4SD) in partnership with the Environment Agency and the Natural Step continues to be led by IES Council member John Baines. The project has had an interesting year, with meetings with high-profile figures such as Barbara Young, Chief Executive of the Environment Agency (EA) in October 2004 to discuss the role of professions, which has resulted in the re-enforcement of PP4SD's position within EA. Such meetings will continue to be a strong feature of the PP4SD project.

The project has also worked with the land-based sector, including the production of training pilot materials which were distributed to land-based professionals in December. This one-day training course was given to the horticultural sector on integrating the principles of Sustainable Development in their working practices. The land-based materials developed by PP4SD were used to deliver a one day course in July 2005 to lecturers from Pershore Group of Colleges – a land-based college – in collaboration with Heather-Barret Mold, the college principal and an IES Council member.

The project has successfully completed its second phase and the EA and the Royal Society for the Protection of Birds have made small grant contributions for the Phase 3 strategy of the project. Phase 3 is more a 'development phase' – moving things forward and developing inter-professional learning regarding sustainable development.

More information on the latest development of the project and the land-based materials can be found on the PP4SD website at *www.pp4sd.org.uk*

Content rating 9/10

The scoring above is a little misleading as the content that is on the site rates at least 10 out of 10. Yet somehow, it didn't feel right giving the site full marks when there was still a chunk of the material to be added. By the time you read this, the situation should have been rectified (missing material under the 'Learning and Developing' section is due to be completed by August 2005) and you can judge for yourself.

However, the structure of the site has been given some real thought. The navigation offers a range of choices from 'The Big Picture' through to 'Getting the Right Work', and 'Finding the Right Job'. Each section opens with a simple italicised piece of text that further explains the content of the page before you scroll down and skim it for yourself.

Onward links to other related websites are sprinkled through the web pages, rather than gathered together on one 'Links' page, which encourages immediate exploration and much better relevance. There are also plenty of useful .pdf downloads available for study at your leisure and the overall style of the copy is informed but accessible.

Updating frequency N/A

It's a brand new site with no immediate way of ascertaining the last time it was updated, so for now, the information is up to the minute. Most of the content will not date quickly, but it would be good to have a 'last updated/last reviewed' indicator somewhere on the site for those who visit it for the first time. Without it, there will always be a question mark hanging around in the mind of the visitor about the timeliness of the content.

Bookmark potential 9/10

For the target audience, it's a great place to start their career planning. It has a useful overview of the sprawling and still evolving environmental industry, with some well thought through copy that includes further signposting and links to make a visit at anytime worthwhile. For those already in the industry, ES would still recommend a visit; it is a salutary experience to have a look at the business you are part of as related to a series of outsiders.

Google rating: 2/10

Doesn't yet figure on the first page of a Google search of the terms 'environment careers'. Early days perhaps, but some work to be done on search engine optimisation here.

Not to be confused with:

http://www.environmentalcareers.org.uk – a website address that doesn't technically exist, but if you accidentally type it in, you'll end up like ES did at the website hosted by the Chartered Institution of Water and Environmental Management specifically geared to those seeking environmental jobs. Complementary in many ways, it doesn't include the same type of information geared to those new to the job market in general and the environment sector in particular.

IES NEW MEMBERS

The Institution is pleased to welcome the following new members (with membership number and grade in brackets):

Mr Francis Au	Chemist, The Hong Kong Electric Co Ltd (2540 F)
Mr Nicholas Barber	Principal Environmental Engineer Joynes Pike & As Limited (2544 F)
Dr Sofia Billett	Area Support Team Leader, SEPA East Region (2536 F)
Dr Tim Bines	Director, Parnassia Ltd (2599 Honorary Fellow)
Mr Alastair Blaines	Environmental Scientist, Johnson Poole and Bloomer (2515 A)
Mr Paul Bond	Senior Consultant, Aspect Assessment Ltd (2584 F)
Mr Andrew Bowker	Environmental Scientist, Wardell Armstrong LLP (2583 A)
Mr Adam Boyden	Environmental Planner, Nicholas Pearson As Ltd (2580 F)
Mr David Boyland	Senior Environmental Consultant, Mott MacDonald Ltd (2590 F)
Mr Philip Bradley	Service Engineering Director, Casella Stanger (2548 Licentiate)
Mr Philip Brown	Director, Robinson Environmental Ltd (2535 F)
Mr Zoe Buckley	Environmental Consultant, WSP Environmental LTD (2560 F)
Mr Steven Byrne	Senior Consultant, Enviros Consulting LTD (2556 F)
Dr Ronald Campbell	Lecturer, School of Engineering Science and Design (2503 F)
Miss Jayne Carrick	Environmental Engineer, VHE Construction PLC (2513 F)
Ms Julie Carter	Principal Environmental Consultant, STATS Ltd (2572 F)
Mr Alex Chan	Environmental Protection Officer, Safety and Environmental Protection Department (2575 F)
Dr Tim Chatterton	Research Fellow, AQMRC Air Quality Management Resource Centre (2527 F)
Mr Wing Cheung	Senior Environmental Engineer, Wai Kee Construction & Transportation Co Ltd (2517 A)
Mrs Rebecca Christye	Environmental Consultant, BMT Cordah Ltd (2525 F)
Mr Manuel Chua	Environmental Scientist, Blac and Veatch Hong Kong Ltd (2552 F)
Mr Gordan Clamp	Principal Environmental Protection Officer, Environment Protection (2512 F)
Mrs Nicola Clay	Environmental Scientist, Port of London Authority (2570 F)
Mr Alastair Cook	Senior Engineer, Suite 2 (2519 F)
Ms Alexandra Crone	Environmental Scientist, Johnson Poole and Bloomer (2516 A)
Dr Stephanie Croxford	Senior Engineer, White Young Green (2568 F)
Mr Colin Cunningham	Director, CLARRC Contaminated Land Assessment and Remediation Research Centre (2567 F)
Ms Kathy Derrick	Senior Scientific Officer, Bristol City Council Environmental Quality Unit (2589 F)
Mr John Ditchburn	Geotechnical Engineer, Robinson Environmental Ltd (2534 A)
Mr Peter Doyle	Managing Director, Ecobody Limited (2508 F)
Mr Thomas Easton	Organics Manager, Alcontrol Technichem (2520 A)
Miss Joanne Eaton	Student Administrator (2578 A)
Mr Edward Feely	Senior Project Engineer, ARUP Consulting Engineers (2529 F)
Mr Stephen Forster	Principal Consultant – Bioremediation and Environmental Impact Assessment, Fonte House (2528 F)
Mr William Franklin	Environmental Scientist, STATS Ltd (2582 F)
Mr Benjamin Gardner	Sustainable Development Advisor, DEFRA (2537 A)
Dr Hemda Garelick	Principal Lecturer, Middlesex University (2543 F)
Mr John Harper	Environmental Protection Officer, SEPA West (2524 F)
Mr Keith Harris	Sampling Officer, SEPA (2514 A)
Mr David Harvey	Director, ADM Ltd (2532 F)
Ms Elizabeth Heath	Senior Environmental Consultant, Waterman Environmental (2569 F)
Prof Stephen Hill	Associate Dean, University of Plymouth (2518 F)
Ms Sarah Hodgson	Scientific Officer, Teignbridge District Council (2539 F)
Mr John Hourd	Environmental Consultant, Hyder Consulting Ltd (2571 F)
Mr Peter Hulson	Senior Environmental Scientist, Ove Arup and Partners (2547 F)
Miss Ona Igbokwe	Environmental Microbiologist, London Borough of Camden (2588 F)
Miss Nicola Jones	Office Clerk, MUS (2504 Student)
Mrs Rachel Jones	Senior Environmental Manager, Terence O'Rourke Ltd (2531 F)
Mr Joseph Jowett	Field Scientist, APEM Ltd (2594 A)
Dr Rolf Jucker	Senior Lecturer, Keir Hardie Buildings (2509 F)

Miss Ailish Kelly	Consultant Environ (2501 A)
Mr Paul Kelly	Business Improvement and Environmental Coordinator, Mowlem Plc (2546 F)
Mr Ghulam Khan	Agricultural Officer, Department of Agriculture and Food Ireland (2565 F)
Mrs Leslie-Anne Le Blanc	Environmental Scientist, Ove Arup and Partners Ltd (2533 F)
Mr Kwok Lee	Environmental Engineer, Health Safety and Environment Department (2541 F)
Dr Martin Lee	Senior Consultant, HKSAR Environmental Protection Dept (2598)
Mr Colin Mackay	Freelance Environmental Consultant and Business Development Manager, Ascot Enterprises Limited (2521 F)
Mr Keir McAndrew	SEPA (2553 F)
Mrs Sarah McMahon	Environmental Quality Manager, Bristol City Council (2597)
Mr Terence McMenam	Project Engineer, Robinson Environmental Ltd (2510 F)
Dr Kevin Monson	Postgraduate Student (2511 A)
Mr Gordon Mudge	Technical Director, RPS (2505 F)
Mr Raghu Narayanam	Recycling Data Promotion Officer, Luton Borough Council (2507 A)
Mr Sheung Ng	Environmental Engineer, Wai Kee Construction & Transportation Co Ltd (2522 F)
Mr Christopher Ochulor	Regeneration Research Officer, London Borough of Newham (2523 A)
Mr George Odhiambo	Researcher, SPAC Research Unit (2591 A)
Mr Randolph Palmer	Senior Scientist, Ove Arup and Partners (2506 F)
Mr Paul Panini	Environment Manager, Lubrizoc Ctd (2574 F)
Mr Stephen Pearmain	Yeoman House (2573 F)
Mr Steven Pyatt	Environmental Scientist, Hyder Consulting Ltd (2554 F)
Mr Daniel Quilter	Recent Graduate (2538 A)
Mr Faiz Rauf	Graduate (2557 A)
Mr David Revill	Environmental Planner, Nicholas Pearson As Ltd (2564 F)
Mr Noaman Salim	Senior Engineer, TEKNICA Ltd (2581 F)
Miss Sally Shaw	Principal Contaminated Land Officer, Greater Manchester Geological Unit (2561 F)
Miss Melanie Smith	Environmental Scientist, Mott MacDonald Ltd (2551 F)
Mr Harry Smith	Land Regeneration Officer, Land Regeneration unit (2555 F)
Professor Bradley Smith	Dean, Huxley College of the Environment (2579 Fellow)
Ms Elizabeth Stanmor	Geo-environmental Engineer, Structural Soils (2562 F)
Mr Jonathan Tait	Scientific Officer, Specialist Pollution Team, East Riding of Yorkshire Council (2593 F)
Mr Samuel Tsui	Environmental Project Manager, China State Construction Engineering (Hong Kong) Limited (2576 F)
Dr Bethan Tuckett-Jones	Senior Consultant, Parsons Brickenhoff (2596)
Mr Benjamin Tuson	Network Support Officer, National Grid Transco (2586 F)
Mr Martin Valenti	Policy Development Officer, SEPA (2559 F)
Dr Yasmin Vawda	Senior Consultant, Carsella Stongara (2502 F)
Ms Michelle Waddicor	Environmental Consultant, Leyden Kirby As Ltd (2530 A)
Dr Kirsten Wagner	Graduate Environmental Scientist, FaberMaunsell (2549 A)
Mr Oliver Warhurst	Environmental Scientist, CPL Laboratories (2542 F)
Mr Peter Weddell	Technician, Meller Beauty Ltd (2558 A)
Mr Matthew Whitman	Air Quality Officer Chelmsford Borough Council (2550 A)
Dr James Wilson	Senior Environmental Scientist, Chemical Hazards and Poisons Division (2563 F)
Mr Ronnen Wise	Principal Environmental Consultant, Hyder Consulting (2585 F)
Dr Tak Ching Wong	Resident Environment Protection Officer, Ove Arup & Partners Hong Kong (2566 F)
Mr Joseph Wong	Environmental Protection Officer, Environment Protection Department, Hong Kong (2592 F)
Ms Amanda Wood	Senior Environmental Scientist, Ove Arup and Partners Ltd (2577 F)
Ms Jacqueline Young	Environmental Development Officer, Plymouth City Council (2587 F)

KEY: **F = Full Member** **A = Associate Member** **L = Licentiate Member**

SOCIETY FOR THE ENVIRONMENT
CHARTERED ENVIRONMENTALISTS

The following IES members have become Chartered Environmentalists, the new qualification of the Society for the Environment:

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Mr Ronald Allen	(1434)
Mrs Hazel Andrews	(1199)
Mr Graham Applegate	(1445)
Dr Andrew Ayres	(1209)
Mr John Baines	(2511)
Dr Heather Barratt-Mold	(1888)
Dr Sofia Billett	(2450)
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Mr Ashley Bird	(1195)
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Mr Jason Hodgkiss	(1221)
Mr Arend Hoogervorst	(1900)
Mr John Hourd	(2460)
Mr David Howes	(1439)
Mr Peter Hulson	(1886)
Miss Joanna Huntley	(2441)
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Dr Matthew Ireland	(2492)
Miss Andrea Jagger	(2485)
Dr Paul Johnson	(1435)
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Mrs Rachel Jones	(1885)
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Mr Simon Snape	(880)
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Mr Clive Sproule	(2430)
Ms Elizabeth Stanmore	(2453)
Mr Matthew Stoaling	(2426)
Ms Catherine Storey	(2429)
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Mrs Wendy Youngson	(1228)

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Your application for chartered status will only be considered if your IES subscription is up to date. If your subscription is in arrears, send your payment (£70 a year for Fellows, £55 for Members) to: IES, Suite 7, 38 Ebury Street, London SW1W 0LU.