

Journal of the Institution of Environmental Sciences

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IES INFORMATION

'Opportunities for change'

– IES response to the DETR

IES is the professional association for environmental scientists and for the last 26 years its members have supported and encouraged a holistic approach to environment and development issues and solutions based on sound science. It does this through education and training programmes for its members and by setting professional standards. It also undertakes education activities aimed at other professionals and the wider public.

We have read the document with interest and are happy to submit our observations and recommendations for your consideration. These are divided into two sections:

1. General observations on the document as a whole.
2. Answers to specific questions as requested. These cover only those sections where we have sufficient expertise to make informed comment and recommendations.

General comments

IES welcomes the opportunity to respond to the Government's document 'Opportunities for Change'. IES supports the approach of broad consultation in the development of the Sustainable Development Strategy and the Government's commitment to put sustainable development at the heart of its policies. IES shares your vision of a sustainable society built on new integrated ways of thinking about choices across government and throughout society.

While welcoming the consultative approach, we would have preferred an approach based on participation, in which government and representatives of the different interest groups identify the issues and plan the solutions together.

Such an approach we feel would develop a stronger sense of ownership of the strategy by the various groups involved.

The document assumes that perpetual economic growth is compatible with the goal of sustainable development. We feel this assumption is unproved. Unless it can be demonstrated, the whole sustainable development programme is undermined. There appears to be a second assumption, albeit implicit, that the ingredients of quality of life are determined solely by economic growth. Is economic growth the right criteria to use? Would it not be preferable to

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use the human development index as a measure? At least, the indicators used to measure economic growth need to be revised so that the destruction of the environment and its subsequent repair do not both appear on the balance sheet as economic progress when all that has been achieved is a return to the *status quo*.

IES feels that the document needs to address these issues more thoroughly because they represent the foundation on which to build sustainable development plans.

Answers to specific questions

Achieving sustainable development

We feel a change of priorities is required, from one where environment and other issues are considered as subsets of economy to one where economy is considered a subset of environment. We recommend developing ways of measuring economic growth which take environmental costs into account. Better still, use another indicator such as the human development index. We recommend that life-long education and training are identified as priorities because without them people will not have the knowledge, understanding, skills and motivation needed to respond to the challenge of achieving sustainable development.

Sustainable development is a holistic concept which needs to be addressed in manageable parts. The role of government should (as recent years have shown) be to fulfil three basic functions:

- Regulation with targets and objectives.
- Modification of market forces to encourage positive developments rather than short term expediency.
- Support programmes which aid and inform less powerful groups/members of society thus enabling greater involvement in the process.

The Government can make a substantial contribution by continuing its effort to ensure that its policies are increasingly integrated so that policy does not encourage development with contradictory outcomes.

Keeping track of progress

The 'State of the Environment' reports provide a useful means to assess

progress towards the ill-defined goal of sustainable development. We commend this open approach and hope it will continue. We welcome the encompassing of indicators developed by Local Agenda 21 groups.

We advise that when developing indicators the Government is mindful of information hierarchies or pyramids where more local detail and objectives are accumulated to provide a national picture.

There need to be some indicators that show that sustainability in the UK is not being achieved on the back of unsustainable practices overseas. For example, sustainable farming could be achieved in the UK but to feed ourselves we import food produced in unsustainable ways elsewhere. There should also be indicators relating to education and training.

Sustainable goods and services

The many successful government and industry led initiatives to improve environmental performance should be continued. We wish to see that the Government review encourages the use of resources for more results orientated initiatives rather than banging the 'awareness building' drum. We recognise that this will involve detailed review of success factors and more precise definition of terms and objectives. The Institution wholeheartedly supports the technocratic objective of 'Factor 4' while at the same time welcoming the realisation that sustainable development is not simply a technical issue.

However, this section avoids the question 'What level of consumption is sustainable?' It suggests economic growth can continue unhindered if it is clean and efficient.

Producers

There is much 'lip service' paid to improving environmental performance. Why else does a company like National Power only use its desulphurisation plant at Drax when it cannot achieve its emission targets in other ways? Regulation is needed, but without the commitment of people at all levels of responsibility, environmental standards are likely to be the minimum set by regulations. We recommend that environment becomes a requirement of all professional pre- and in-service training.

Consumers

Economic growth is achieved by increasing consumption of goods and services. Sustainability is most likely to be achieved in the UK by reducing consumption.

We support the provision of simple, standardised information on all consumer products supported by a programme of consumer education. Consumers need to be able to make sense of the information they are given. For example, if they do not understand the causes and consequences of global warming, then information about CO₂ on the package would be meaningless. It goes back to providing sound environmental education in the schools.

A levy could be imposed on all company advertising and promotion budgets to pay for consumer education. The information should normally be on the product with more information available on demand – perhaps on a standard sheet as is done for some health and safety information.

Recent history shows that 'green consumerism' is an important part of sustainable development as a spur to manufacturers. However, it has its limitations as experience with, for example, ecolabelling and the sale of organic produce illustrates. Concerned consumers appear to form a smaller cohort than surveys suggest and that there is a degree of hypocrisy (based on expediency) within all of us. Consequently there is scope for Government to lead consumer behaviour by regulation, infrastructure support (to overcome difficulties) and financial incentive.

It must be recognised that the British populace has a different contemporary tradition with respect to green purchasing and issues like recycling to our northern European neighbours. If consumer action is to be a principle plank *en route* to a more sustainable future, then Government must think of some form of 'cultural manipulation' to cater for the national character.

Building sustainable communities

In many cases the planning system is confrontational. This is a product of the process of development, and the creation of winners and losers with the winners tending to be project promoters. There is also a more ready realisation of short term benefit without an appreciation of longer term consequences.

This has been illustrated by the growth of out-of-town shopping which has contributed to the breakdown of local communities by, for example, the loss of local shops and contributing to the need for the car culture. The introduction of Planning Policy Guidance Note 13 has slowed this process although it might be argued that it is shutting the gate after the horse has bolted. There is a need for planning policy guidance to move with the times and not ten years behind.

The most sustainable patterns of development will be to foster a recognition that some activities are best centralised on large-scale production (owing to associated economies of scale, the nature of an attraction), whereas others need to be encouraged on a more local basis. The importance of the latter cannot be overstated as these types of activity which may be environmentally, culturally or economically driven mean that the need to travel is reduced and that people are more likely to come into contact. This hypothesis has been addressed extremely well by the geography lecturer John Adams, at University College, London. This will be a valuable area for Government sponsored research.

We support the Government use of the BREEAM assessment tools. Government policy should seek a means by which the construction industry can contribute to a more sustainable future. Currently, the large contracting companies need to promote large developments so that they can keep their workforce active. In reality they have little choice given the highly competitive nature of this market

The application of market forces has meant that the development of many domestic dwellings has been contrary to the aim of sustainable development. The symptoms are:

- construction of unimaginative dwellings of poor material, with a short design life and poor resource use characteristics;
- creation of estates with limited facilities (transport, amenity, cultural, etc) contributing to a car dominated culture;
- unnecessary expansion onto green-field sites while urban areas remain underdeveloped. New housing is clearly required, however, as a nation we appear to have missed the ideal that urban areas should be the pinna-

cle of human achievement rather than something which many of us wish to escape. These concepts are well discussed by a number of leading contemporary architects and urban planners.

Tourism presents fundamental challenges which are not readily addressed without controls which would not be readily accepted in our democracy. The Institution supports many of the initiatives currently being pursued at a local level by regulatory authorities and the industry itself. These include:

- diversification of tourist interest, ie, expanding the areas of interest;
- direction of funds to protect or enhance attractions;
- attempts to reduce the number of trippers so that tourists bring more resources into the area they are visiting;
- attempts by the hotel industry to improve their environmental performance.

Managing the environment and resources

The Institution believe that there should be a long-term energy policy. It should allow the development of a market with a framework that recognises the importance of strict regulation which readily permits flexibility and innovation. It should also recognise the need for small and medium renewable energy companies to provide diversity of supply. A balance needs to be struck between benefits brought about by changes in energy policy and the merit of maintaining existing infrastructure to fulfil design life.

We support the legislation and policy being pursued by the Government and wish to see more emphasis on technological solutions and the removal of market barriers to their adoption. This might involve supporting smaller businesses which have techniques and processes for reducing emissions, further monitoring of vehicle exhausts and excluding dirty vehicles, especially in urban areas.

We welcome Government action in the field of water management and wish to see more incentive for the water industry to address water management issues at the consumer end and a balanced approach to water management which decouples the direct link between building of additional water infrastructure from the profits of the water com-

panies. This will enable a more rational approach to discharge management based on scientific understanding of risk and subsequently lead to more sustainable development which balances the environmental and financial costs of advanced waste water treatment with the benefits of the improvement obtained. A greater emphasis on maintenance will also promote more sustainable resource management.

We recognise the challenges presented by fisheries management and wish to see the Government place a greater emphasis on fisheries stocks in European fisheries negotiations. We wish to see more emphasis on the collection and interpretation of fisheries data from a national perspective.

We welcome the support of the Fisheries Stewardship Council, and would like to see more positive initiatives within the national 12 mile limit. Examples of possible actions would be an examination of methods used in scallop fishing which tend to destroy the seabed, and exploring the idea of more marine reserves such as Lundy so that growing numbers of divers might enjoy the nation's underwater heritage.

Sending the right signals

Better information and education are required. At school level there are many materials produced for teachers to use. There is a huge number of awards to go for. There are good guidance notes from government and NGOs. However, there is little space in the existing curriculum to provide a coherent and comprehensive environmental education. We recommend that this is addressed in the next curriculum review. In further and higher education there are recommendations waiting to be implemented in the Toyne Report and its later review. These should be actively promoted and supported by DfEE. Environmental education should be an important part of the Government's life-long education strategy.

We support Government initiatives in sustainable development/environmental education and spreading of 'best practice'.

We will welcome a change of emphasis toward resolution of problems based on scientific merit as well as the study of the issues themselves. This is commensurate with the aims and objectives of our Institution.

The Hon. Secretary's news desk...

CSTI and Chartered Scientist

For some time now an Advisory Group of the CSTI, appointed by the Board, has been considering the possibility of the establishment of a new chartered designation of 'Chartered Scientist'. The award of this designation would be administered by a Registration Authority acting under the umbrella of the CSTI (possibly reconstituted as a Science Council). The scheme would have similarities with but not mirror the Engineering Council and the designation Chartered Engineer.

The Advisory Group, on which I have been representing the Institution, has now concluded its findings and submitted its report to the Board. There is in prospect, albeit a year or two away, the possibility that a designation of this nature could become available to suitably qualified members of the Institution. One practical difference that would apply in this event would be that the present CPD scheme would be strengthened and become mandatory for those seeking the designation.

Accreditations

This is proving to be a busy year for the accreditation of new courses. In March, the HND and BSc (Hons) courses in Landscape Ecology at De Montfort University were successful in their assessment.

Also in March, and at relatively short notice, a new suite of postgraduate courses at Certificate, Diploma and MSc level were accredited at Manchester Metropolitan University.

In prospect are further assessments at the University of the West of England (BSc (Hons) Env. Science, June 1998),

Manchester University (BSc (Hons) Env. Science/Studies, Autumn 1998) and Bournemouth University (BSc (Hons) Env. Protection, Autumn 1998).

Education workshop

On 6 May 1998 the Institution organised an Education Workshop which was attended by an invited group representative of both the Education Committee and the university departments with IES accredited courses. The workshop was originally intended for development of ideas on a core curriculum for environmental science degree courses. However, in view of recent developments by the QAAHE (Quality Assurance Agency, Higher Education) the scope was extended to encompass standards, methods of assessment and related external accreditation.

The workshop started auspiciously with a paper presented by Dr Peter Milton on the policies and programme of the QAA of which he is Director of Programme Review. A productive series of discussions followed and one outcome of the day has been an official Institution response to the consultation paper recently published by the QAA.

Further dialogue is anticipated with the QAA over the developing question of standards and assessment of courses. It is hoped to publish a more detailed report on the workshop in a later edition of the Journal.

Responses

As well as a busy period for accreditations, we have been well occupied with responses to consultation documents from a number of sources. In addition to the QAA consultation referred to above, by the date of publication we will have submitted three other responses as follows:

- Enforcement and Prosecution Policies, to the Environment Agency;
- Sustainable Development – Opportunities for Change, to the DETR;
- Access to the Countryside, to the DETR.

IES publications

For several years the only Institution publications in print and available have been the Journal and the *Environmental Careers Handbook*. Efforts are now being made to supplement these publications with further technical papers. The advent of desktop publishing makes this a practical proposition as we have low expectation in terms of demand for any one item. A full scale print run would not be a practical proposition economically. As a first step, a number of papers published previously in the Journal have been selected and made available for purchase either singly or in collected sets. The full list may be referred to on the opposite page.

Exhibition proposal

It has been proposed that the IES should promote a major environmental exhibition to provide an opportunity for display by all manufacturers of environmentally related products and for other environmental companies to promote their services.

It may be considered that this is a project beyond the resources of a small organisation such as the IES or that it is an inappropriate activity for a professional institution. We would be interested to know members' views on this matter. Please write to the Honorary Secretary.

RAF

News of IES members

Monica Hale

Monica Hale is due to take up an appointment as environmental specialist at the International Finance Corporation (part of the World Bank Group) in Washington DC in early June, with responsibility for developing and delivering environmental training pro-

grammes to IFC staff and financial intermediaries in developing countries.

She was formerly Reader in Environmental Management, and Director, London Environment Centre.

Dr Tony Hill

It is with sadness that we have to record the untimely death of Dr Tony Hill, a

long term member of the Institution. Dr Hill was a principal lecturer at Sunderland University, in charge of the environmental courses accredited by the Institution.

He died after a short illness and will be missed by his colleagues at the university and in the Institution. Our sympathies are with his bereaved family.

Book review

It is unusual to come across a publication of this nature which deals primarily with experience in the Far East with supporting, but limited, information drawn from other quarters of the globe. It is therefore refreshing and also very interesting to read in considerable detail of the policies being implemented in schools, both primary, secondary and beyond, across the region.

The extent of interest in environmental matters has been developing strongly in the Asian countries in recent years and this is reflected in the policies for environmental education which are being introduced. These are impressive.

There are contributions from various authors on the particular initiatives in the Philippines, Indonesia, Brunei, Malaysia, India and Japan. It seems to be widely recognised that environmental awareness takes time to foster and that informed and widespread teaching policies *now* will benefit their societies in one or two decades.

On this understanding, the teaching policies are being introduced at an early stage of education and running on through to higher education. The Asian experience, indeed, seems to be somewhat ahead of our own policies in this respect.

The publication is extensive and in addition to the well represented Asian context, there are comparable articles on the policies and practices in Australia, Canada, the United States, Europe and

Title:

Environmental Education for Biodiversity and Sustainable Development

Edited by:

Mohamad Soljani and Monica Hale

Publisher:

**University of Indonesia
(in co-operation with
London Guildhall University)**

Price:

**Paperback £17.00: 499pp.
(Available through the
London Environment Centre)
ISBN 979-647-000-4**

the United Kingdom.

In addition to the regionally based articles, there are a number of introductory articles giving more general views on aspects of environmental education which are stimulating. There are also some closing articles on co-operation and networking in environmental education on a regional basis.

All in all this is a wide ranging and informative publication which will be of interest to all those with a wider interest in the field of environmental education.

Dr R. A. Fuller

Occasional papers available now

Waste management

- From waste to woods – planting trees on landfill
- From waste to woods: trees on landfill and their place in landscape
- Enhanced landfill strategy
- Waste minimisation: the long term benefits
- European study on EISs of installations for the treatment and disposal of toxic and dangerous waste
- Mercury fall-out from crematoria

Education and training

- Environmental courses undergo a quality assessment
- Student environmental declaration
- On-line information systems in environmental sciences courses
- Global environmental charter and network for students

Business and industry

- The tourism challenge
- The tourism debate and environmental scientists
- Enjoying environmental science as a career
- The Brent Spar and the best practical environmental option

National and local government

- Transport policy, environmental pressures and the new U K government
- Local Agenda 21 – making it work

New members

The IES is pleased to welcome the following to membership of the Institution:

Mr J. C. Barton	Recent graduate, University of Hertfordshire
Mr M. Brannock	Environmental Scientist, Voelcker Science
Mr I. R. Bristow	Student, University of Bradford
Mr M. Chowdhury	Recent M.Sc, University of Leeds
Mr A. J. Cooper	Youth Worker, Cardiff City Farm
Miss C. E. Gabriel	Consultant – Health, Safety & Environment, EEF South
Miss E. Jarvis	Student, De Montfort University, Leicester
Mr N. M. Jones	Environmental Consultant, Stanger Science & Environment
Miss N. J. Lord	Recent graduate, Staffordshire University & Sunderland University
Miss S. Mitchell	Recent graduate, University of Sunderland

Mrs L. Murray	Special Accounts Manager, Eurocare Ltd
Ms C. R. O'Shea	Student, University of Central Lancashire
Mr M. D. Royall	Environmental Officer, SGS Environment
Mr M. Sichel	Senior Environmental Specialist, Scott Wilson Resource Consultants
Mr A. G. Sharpe	Environmental Consultant, Canada
Miss R. A. Szal	Recent graduate, University of Sunderland
Mr D. J. Taylor	Environmental Researcher, Greater Manchester Waste Ltd
Mr J. Wateridge	Landfill Manager, Mid Essex Gravel Pits Ltd
Mr T. K. Winder	Recent graduate, University of Lincolnshire & Humberside

This section of the Journal is in response to the growth of news, information and activities which underpin the Education Committee of the IES.

Special prominence will be given to student activities and projects, national and international initiatives, campus developments and research in order to capture the diversity, wealth and vitality of

modern environmental education.

Readers are invited to send articles and letters to:

■ **Derek Blair, School of the Environment, University of Sunderland. Benedict Building, Sunderland SR2 7BW.**

■ **Tel: 0191 515 2737.**

■ **Fax: 0191 515 2741.**

■ **E-mail: derek.blair@sunderland.ac.uk**

June is greening out all over

June is the month of exams, project submissions and final report writings for students and the month of marking, examining and judging for staff. However, for action-oriented environmentalists, it promises to be a month of challenges and opportunities; indeed, June 1998 heralds an interesting summer of 'greening'.

World Environment Day

Internationally, June 5 marks World Environment Day. World Environment Day was established by the United Nations General Assembly in 1972 and conceived as a 'people's event' with governments, individuals and community groups organising grassroot activities to improve their local environments. Popular examples are cleanup campaigns, street rallies, bicycle events and green concerts.

UNEP coordinates the World Environment Day from Nairobi. In 1998 the theme is 'For life on Earth: Save our Seas' – fitting in view of it being the UN International Year of the Ocean. Paradoxically, the city selected by UNEP to be associated specially with its 1998 campaign is Moscow, presumably not because of its maritime links but as a city in a part of the world (Central and Eastern Europe) which has experienced severe environmental damage.

As the host of World Environment Day '98, the City of Moscow and the Russian Federation are responding by trying to mobilise government and non-government bodies. Two hundred urban and development practitioners are meeting in the first week of June in association with the Centre for Human Settlements (Habitat), followed by a

Conference between June 7 and 9 on Sustainable Cities. Despite its reputation for pollution, Central and East Europe is the stronghold of Europe's wildlife according to the Atlas of European Breeding Birds. The European Environment Agency is now confirming the long held fears of the hundreds of environmental NGOs in this part of the world about the trends towards western style agriculture and development.

World Environment Day in the UK, however, remains surprisingly under-used and relatively little known. The Environment Agency was unable to confirm what activities were being planned. UNED UK holds an annual conference to mark the day – this year it is on Gender and Humanity into the 21st Century – but many organisations seem to be oblivious of the campaigning potential of this international environmental day. As yet.

Contact

■ **Tore J. Brevik, Director, Information and Public Affairs, UNEP Headquarters, PO Box 30552, Nairobi, Kenya**

■ **Tel: (254-2)62-3292**

■ **E-mail: tore.brevik@unep.org**

■ **Web: <http://www.unep.org>**

Green campaigning

In this country, the Don't Choke Britain (DCB) Campaign is more prominent, having been launched at the end of May by Gavin Strang MP, the Minister for Transport, and comedian and writer Ben Elton. During the month of June DCB encourages car users to give their cars a holiday by choosing an alternative way of getting around on at least one day a week. National Car-Free day (June 16)

is the focal point for the Environmental Transport Association (ETA) Green Transport Week between June 13 and 21. Between June 6 and 14 National Bike Week is co-ordinated by the Cyclists' Touring Club (CTC), with the key support of Halfords, and claims to be the biggest of its kind in the world with over 2,000 events expected around the country involving 350,000 people. Other campaigns like Walk to Work Day (June 10) and Walk to School, organised by the Pedestrian Association, are more examples of the same theme.

In view of the imminent Transport White Paper, these events are very timely. Local Transport Minister Glenda Jackson has already said that cycling plays a major role in an integrated sustainable transport system for Britain, the key principles of which are a switch towards walking, cycling, public transport and traffic reduction. Cycling has always been associated with students who therefore constitute a natural advert for this aspect of greening. As well, no doubt scores of undergraduate studies and postgraduate research are being undertaken into cycling and its environmental aspects this summer.

The UK's first ever National Cycling Strategy under the aegis of the Department of Transport is now nearly two year old. Its aims were laudable; to double the number of cycle trips by the year 2002 and to promote cycling on the highway, into town centres and to the workplace. Some local authorities and companies have made more progress than others. According to a CTC survey last year some are paying employees more than 30p a mile in bicycle allowances, equivalent in some cases to car allowances. Southampton University Hospital, on a split site and with severe

parking difficulties, for example, pays a massive 55p. Now that MPs are going to receive a bicycle allowance for parliamentary duties (*The Times*, December 6, 1997), perhaps the precedent is set for others to follow.

In the university sector, only Brighton offers an allowance – an impressive 40p per mile to staff so long as they do not pedal more than 4,000 miles a year, at which point it drops to 22.5p. Needless to say students are not included! ‘Trailblazing’ universities for greening have now another practical criterion to evaluate their corporate commitment, policies and practices.

The Top Ten Cycling allowances per mile according to the CTC in 1997 were:

1. Southampton University Hospital	55
2. Borough of Kensington and Chelsea	44
3. Frenchay Health Care Trust	40
4. Bath & NE Somerset Council	40
5. University of Brighton	40
6. New Forest District Council	31.7
7. London Borough of Merton	31
8. East Hampshire District Council	30.2
9. Dovetail Management Consultancy, London	30
10. Ipswich Borough Council	30

Contacts

DCB: c/o the Local Government Association, 35 Great Smith Street, London SW1P 3BJ

■ Tel: 0171 664 3162

■ Web: <http://www.dcb.org.uk>

Halford's National Bike Week: CTC, 69 Meadrow, Godalming, Surrey GU7 3HS

■ e-mail: nbw@ctc.org.uk

■ Web: national-bike-week.org.uk

Greening universities

The environmental role of universities was to be explored at an international conference organised by the Copernicus Secretariat, appropriately in Krakow, in June but organisational problems have caused its postponement until September. Given the short notice and the busy time for academics in the UK the new date is preferable.

COPERNICUS (CO-operation Programme in Europe for Research on Nature and Industry through Coordinated University Studies) is a programme of the Committee of European Rectors (CRE) designed to bring together universities and other partners on common environmental concerns. More than 200 universities have signed the COPERNICUS Charter which has ten core principles of action. These are institutional commitment, environmental ethics, education of uni-

versity employees, programmes in environmental education, interdisciplinarity, dissemination of knowledge, networking, partnerships, continuing education programmes and technology transfer.

The COPERNICUS programme started in 1992 but has not been particularly active until a meeting in Turkey in May 1997 when a number of leading European universities met. No UK university was represented. Student views and interests were considered through a representative of GOSEA (Global Organisation of Students for Environmental Action), whose background was described in the November issue of the IES journal.

The provisional conference agenda was intended to explore what universities have done since the Earth Summit and the Copernicus Charter in implementing Agenda 21 and sustainable development at local level. Case studies from Central, Eastern, Western and Developing countries were invited in order to interrogate the Charter's core principles.

Contact

INFU: COPERNICUS Secretariat, University of Dortmund, D-44221 Dortmund, Germany

■ Tel: +49-231-755-4090

■ Fax: +49-231-755-4085

■ Web: <http://www.infu.uni-dortmund.de/COPERNICUS/>

DB

Forthcoming courses and conferences

29 June-3 July: Environmental Performance Reporting

University of Surrey.

Covers communication, presentation and disclosure of environmental data to stakeholders. Details: Mrs P Savill, Centre for Environmental Strategy, University of Surrey, Guildford, Surrey, GU2 5XH. 01483 259047.

15-21 July: Rural Renewal 2000

Harper Adams College, Shropshire. Covers: agriculture and the natural environment, rural estate and land management, rural enterprise, the changing rural economy. Details: Carole Hinks, Conference Manager, Harper Adams College, Newport, Shropshire, TF10 8NB. 01952 815324.

16-17 September: Joint Annual Conference of the IEA/LARA

'Achieving Improved Environmental Performance.'

The Swallow Hotel, Sheffield.

£280 members, £320 non-members.

Details: Alison Hirst, IEA, Welton House, Limekiln Way, Lincoln, LN2 4US.

01522 540069.

13-15 October: Risk Assessment for Waste Management

Loughborough University, £497.38.

Details: Rachel Lindley, Centre for Hazard and Risk Management, Loughborough University, Loughborough, Leics LE11 3TU. 015509 222161.

ENVIRONMENTAL SURVEYOR – ASBESTOS

We are looking for a motivated and experienced person to work within our environmental and consultancy department, principally to undertake building surveys for the presence of asbestos. The successful candidate will ideally be highly competent in this specialised area with a proven track record obtained over 2-3 years in the following:

- site surveys for asbestos and other deleterious materials;
- other related health and safety or site assessment experience;
- analysis of bulk samples by optical microscopy;
- air monitoring for asbestos fibres and occupational hygiene.

In return we offer an attractive salary with benefits package to include provision of a company vehicle. Please apply in writing with full CV stating current basic salary and experience to:

Mr Andrew Craig, TechniChem Laboratories Ltd, Brunel Science Park, Kingston Lane, Middlesex, UB8 3PQ.

Earth Centre: testing sustainability from the foundations upwards

The challenge of making sustainability practical and visible is tested in earnest with the start of the year-long construction of the first phase of the Earth Centre, a flagship Millennium Commission project designed to be a national visitor attraction and world centre for sustainable development.

From the project's inception the management team has tried to work to an agreed sustainable philosophy and consider the possible environmental impact of every aspect of the design, construction and management of this world class visitor attraction, which is designed to promote the issues and principles of sustainability from the site of two former collieries in Doncaster, South Yorkshire.

The team, which has an expert advisory committee to draw upon, is trying to use the best available environmental standards, techniques and technologies, in the design of the buildings, its energy, waste and transport infrastructure and in ecological land restoration and management. For example, in the first buildings to be built, it intends to use less than 25 per cent of the energy typically used in buildings of a similar size.

The Earth Centre has employed consulting engineers Atelier Ten to select the design criteria, the building services systems and the building materials for the Planet Earth Gallery and Arrivals buildings, which are key parts of the £34 million stage one development of the centre opening in the summer of 1998. The Planet Earth Gallery will have more than seven different experiences based on visionary planetary themes and will include a large wilderness area and events arena.

Atelier Ten project manager, Jim Grace says: 'The initial choice of design criteria is the most fundamental consideration in sustainable building design. It affects insulation levels, determines whether air conditioning is required and governs the design of lighting, heating and hot and cold water systems.'

The Earth Centre's annual energy targets are set at 40kwh/m² for gas and 50kwh/m² for electrical, compared to typical figures for a similar UK building of 190kwh/m² and 80kwh/m² respectively. Targets for maximum summertime temperatures have been set higher than for a fully air-conditioned building but these will be quite comfortable for people in summer clothing.

Mechanical CFC-based air refrigeration is avoided through the use of a 'thermal labyrinth' beneath the Planet Earth building, which stores night-time 'coolth' and uses it to cool the air in the building the next day. This system will last the life of the building rather than the 15-20 years of an air conditioning chiller plant, and plays a dual role as a structural raft to overcome the difficult ground conditions without resorting to extensive piling or a massive concrete groundslab.

Solar panels will generate hot water, a vacuum drainage system will reduce water consumption by 75 per cent and a greywater collection system will recycle waste water. The Environmental Preference Method was applied rigorously to all materials chosen for installations such as polyethylene for pipes and galvanised steel for ventilation ducts, which both have low embodied energy.

The Planet Earth building will be built into the hillside with the roof cov-

ered in local earth. Concrete was chosen for the main structure as it has good heat storage capacity and is considered the best material for the highly loaded retaining walls and roof components, as well as being ideal for the basement raft. A separate timber canopy will be built out of UK grown softwood.

Jonathan Smales, chief executive and co-founder of the centre, watched the diggers start the first stage of construction and said: 'This is a living experiment in sustainability from the foundations upwards. I hope that it will become a focus for people to learn about the issues and principles of sustainability as well as being a major tourist and family attraction in its own right.'

The Earth Centre is a response to a call from the UN Commission of the Environment and Development for vast campaigns of education debate and public participation in order to promote sustainable development, and is regarded as a pragmatic development of the themes and challenges set by world leaders at the Rio Earth Summit in 1992.

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RD

■ Read in conjunction with Earth Centre article in *Environmental Scientist* Vol 6 No 4, Jul/Aug 1997.

Alternative energy

The Department of Trade and Industry (DTI) Solar Task Force reports that solar energy from photovoltaic panels could be the single most important long-term means of achieving deep cuts in greenhouse gas emissions. Solar energy is likely to enjoy explosive growth some time in the next century. The report calls for a minimum of 70,000 solar roofs to

be installed in Britain by 2010 as the UK's contribution to the 500,000 European solar roofs programme. What progress is being made towards these high objectives?

The Ford automobile plant at Bridgend, south Wales has installed 26 solar skylights supplied by BP Solar covering 25,000m². This has cost £1.4m

and is jointly funded by Ford, the EU and the DTI. Britain's biggest solar building is at Sunderland and other projects are planned supported by the DTI: Dr Roaf's solar house at Oxford, where solar panels make up the whole south-facing roof, Northumbria University's building where panels are integrated into the facade and the PV roof at the

Centre for Alternative Technology in Machynlleth, North Wales.

The first batch of schools will shortly receive packs for the SCOLAR project which will put PV arrays into 100 schools and colleges and by 2000 there will be equipment available for teaching aids and use on the internet. Support for renewable energy projects comes from the Non-

Fossil Levy – a charge on fossil producers which is distributed to renewable companies. The fifth Non Fossil Fuel Order was announced in November 1997.

The DTI is revising its policy for renewable energy and considering options for the delivery of 10 per cent of electrical demand from renewable sources by 2010. The previous

Government's cuts in the renewable programme have been cancelled and the photovoltaic's present budget has been increased. This is to fund research and development and demonstrations in solar energy currently worth £1.5m per year and photovoltaic support has recently been doubled to £1.0m.

RD

Wind energy

Over 130 delegates attended a conference on wind energy held in March in Aberdeen, hosted by the Scottish Agricultural College (SAC). Alastair Hunter of SAC, who has been in the forefront of developing computer models for wind energy adoption in rural areas, argued that if wind turbines displaced the same amount of electricity as farmers in Scotland currently use, that is 1 per cent of Scottish electricity supplies, carbon dioxide emissions would be reduced by two hundred thousand tonnes. Only 250 modern turbines would be needed, £25m would be generated within the rural economy, and over 2,500 jobs would be secured directly in rural businesses or

downstream from those businesses.

The event saw the launch of *Wind power – a guide for farms and rural businesses*, a practical guide produced as part of a project undertaken for the European Commission DG XVII under the ALTENER Programme. The publication takes a step-by-step approach through a wind power installation, providing the basics of how wind power works, examples of successful applications, environmental considerations, equipment available, the financial implications and safety dimensions. Marielle van Aggelen of the Dutch National Bureau for Wind Energy, the project co-ordinators, described a process of dif-

fusing knowledge and understanding of the nature and potential of wind energy through the employment of trained specialists from the Dutch advisory service. Interest is building up and a group of ten farmers have joined forces to set up a wind park with ten turbines.

The conference's keynote address by Phil Thomas suggested that the largely unexploited potential of this technology would be able to double the present supply of energy from renewable resources in the foreseeable future, presenting an enormous opportunity for farms and rural businesses to harvest natural energy resources from their land.

DH

Road and rail transport

Much discussion is concerned with the need to encourage the public to use public and community transport more instead of their own cars. This particularly applies in rural areas where we are told that only one in five households in rural areas do not have access to a car, and many more do not have access to a car during the working day.

We are aware that a Government White Paper on transport policy is due to be published any month. But in the interim what is happening at the Department of Environment, Transport and the Regions (DETR)?

Rural public transport boost

£41.7m is to be available for use by local authorities (CCs) in 1998. This will be distributed according to the size of the local rural population. Nine LAs with high rural populations will therefore receive over £1m each, and a total of £32.5m is available to provide additional rural bus services. Later this year £5m will be allocated as part of a 'bus challenge' to encourage innovative LA bus schemes.

The remaining £4.2m has been made available for community-based transport initiatives in rural areas to be administered on behalf of DETR.

The Chancellor has also announced a £40m increase in bus fuel duty rebate to offset the budget increase in fuel duty.

Thus in their own way if more buses can result in a lower car mileage then there should be less pollution and use of fossil fuels.

Rail freight project

A new contract between Freightliner Ltd and Tankfreight plc is planned to commence in June 1998 for the carriage of purpose built road tankers between Liverpool and Tilbury using 'piggy-back' wagons. This will save over 1,000 lorry journeys per year, help to reduce air pollution and lessen road traffic congestion.

European Union projects

Green vehicles

A new EU-wide project called

Alternative Traffic in Towns (ALTER) has been launched. The project is scheduled to start in Athens, Barcelona, Florence, Lisbon, Oxford and Stockholm and each participating city will decide the category of vehicle, and the urban areas to include.

The cities will renew their own public transport and service vehicles on a low or zero emission basis. They will also only allow vehicles meeting stringent emission standards into sensitive sectors of their towns and cities. So 'green vehicles' will have special exclusive rights to city centres.

Rail transport

In April 1998 EU transport ministers discussed a comprehensive strategy for opening up the single market in rail. Railways have a vital role to play in the reduction of road congestion, in the environment, and economic problems. The single market in other transport sectors is almost complete but there has been little progress on the railways. The EU meeting agreed to improve this position, but warned that it would take time.

RD

Farming reforms and the environment

Derek Hall

With the approach of Agenda 2000 and reform of the Common Agricultural Policy, the relationship between farming and the environment will become ever more a focus of attention. Even before the likely reforms, such issues as field ('blood') sports, genetically engineered crops and BSE have tended to gain media headlines and divert attention away from the wider impact of changing global circumstances on the survival of marginal rural communities.

The British Isles have more than their fair share of marginal agrarian environments. As both entrepreneurs seeking a survivable income and custodians of the rural environment, the farming community has expressed increasing concern about the perceived lack of understanding of rural affairs from what it sees as an essentially urban based government and society.

❶ The success of the combined environmental protection scheme for farmers will be measured by assessing the conservation benefit...❷

This was most forcibly expressed in the countryside march on London held earlier this year. Yet 'the countryside' represents no social or environmental commonality: rural environments and communities are as diverse, if not more so, than their urban counterparts.

The role and perception of the farming community as the custodians of the rural environment is a potentially fragile one. Current proposals to merge the relatively recent Countryside Protection Scheme (CPS) and the Longer-lived Environmentally Sensitive Area (ESA) schemes, whereby farmers are paid from the central budget to undertake and maintain certain environmentally enhancing actions on their holdings, reflects this fragility. The agricultural advisory services argue that there is a need to stress the importance of maintaining at least the current level of inflation-linked funding for the schemes. There is concern that the proposed loss of the more generally applied Tier 1 payments may adversely affect the uptake in existing ESA areas and that farmers going into the new scheme would be financially disadvantaged compared to previous entrants, and that this could act as a deterrent against farmers taking on new environmental initiatives and responsibilities.

The ESA designation requires a great deal of work

in the preparation of environmental plans for both individuals and rural communities. Preparation of these plans needs to accommodate locally unique characteristics and problems. There is evidence thus far that the schemes have been selectively taken up by farmers who were already running fairly low intensity businesses and were often on relatively small holdings. Safeguards or incentives to protect the more marginal areas and to encourage existing extensive systems are therefore essential.

The UK's agricultural advisory services are important lynchpins in this process. Although rarely appreciated, the agricultural advisor is often a key influence in the effective custodianship of our rural environments, and has an increasingly important role to play in assisting farmers in their responses to policy change and the opportunities for economic diversification which may be presented, but which may also raise potential environmental conflicts, such as the development of activity tourism in peripheral areas of outstanding beauty.

For example, in the Uist island chain in the Outer Hebrides the vast majority of holdings are classed as crofts. Groups of crofts collectively form townships which have common hill land and in the case of the townships on the Eastern side, common machair, which is the arable area. Environmentally, the Machairs of the Uists are of international importance, and represent key ESAs. Much effort has been put into stabilising sand dunes here to prevent sand creep onto arable land and erosion. Some 41 per cent of the Machair is classed as SSSI. Crofting is the fabric that holds the rural community together but very few of the crofters live solely off the income generated by their crofts; and these additional activities may not necessarily be consonant with environmental sustainability.

Within this context, the role of the agricultural advisory service is vital in acting as an environmental overseer, providing consultancy and technical support for the rural community of which, particularly in small island societies, the local advisor is very much a part, being co-opted onto committees and becoming involved in all aspects of local development. In the UK's outer islands, despite the remoteness and considerable travel time involved, advisory specialists can expect to be away from base for the whole of the working week, and are heavily dependent upon flights and ferries operating to schedule, which, in the worst winter weather, may not be the case for extended periods. More flexible advisory delivery would appear desirable, and on-island practical training is only a recent innovation, although the positive response to this suggests further training activity can be devel-

oped. The presence of agricultural advisors in the Western Isles, as in other marginal areas, is crucial. The unique and fragile balance between economic, social and environmental concerns in far flung crofting regions is an important element of UK and indeed European sustainability.

The success of the combined environmental protection scheme for farmers will be measured by assessing the conservation benefit rather than simply enumerating the extent of geographical areas encompassed by it. Farmers need more guidance on the objectives and implementation of their environmental plans to assist in the creation of a sense of ownership

by farmers of their plans. Training for farmers is essential and details of how it is to be delivered and paid for need to be specified. The success of the new scheme will depend crucially on the level of funding made available. If this is deemed to be adequate, the new scheme could make a valuable contribution to the development of agriculture in harmony with the environment. If it does not, further questions will be raised in the increasingly tense relationship between town and country: concerning who is subsidising whom, who is feeding whom, and which environments we are protecting, how well we are doing it, and for whose enjoyment. 

Safer eating

Microbiological food poisoning and its prevention

- Why is bacterial food poisoning rising?
- What parts of the food chain are involved?
- Prevention strategies.

Food safety has been an increasing focus of parliamentary and public debate, with the Pennington Group inquiry on *E. coli* 0157, concerns over rising levels of food poisoning in general, standards of hygiene in abattoirs, etc, as well as the debate over the Food Standards Agency (FSA) and its remit.

An important part of this debate concerns bacterial food poisoning, which POST has just reviewed. This note summarises the full report¹ and its findings.

Trends in bacterial food poisoning

To get the overall picture, the full report reviews available information from three sets of statistics:

- notifications² from doctors ('formal') and other sources ('otherwise ascertained');
- results of laboratory tests;
- investigations by UK Surveillance Centres³ into 'general outbreaks' of infectious intestinal disease (IID), which account for 10 per cent of all cases.

Recent trends are shown in Figure 1 and reveal significant rises in all regions. In England and Wales, total notifications have risen more than fivefold between 1982 and 1996 (from 14,000 to 83,000); those for Scotland from 2,700 to over 10,000, with a similar upward trend apparent in Northern Ireland (100 to 1,300). When population is taken into account (Figure 2), it is clear that there are major geographical variations, with Northern Ireland showing much lower rates than either England and Wales or Scotland.

Turning to trends in specific bacteria, the full report looks at the origin, behaviour and symptoms of 11 of the most important food poisoning organisms. Recent trends in the number of laboratory reports (Figure 3) highlight *Campylobacter*, *Salmonella* and *E. coli* 0157 as the bacteria of greatest concern.

Campylobacter is now the commonest bacterium giving rise to food poisoning, with 47,600 cases in

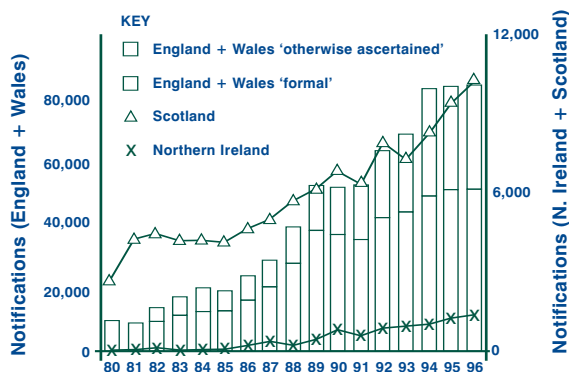
1996. Fortunately, most involve only relatively mild symptoms, and only 1 per cent require medical intervention. Nearly all *Campylobacter* infections are isolated cases rather than part of outbreaks, because the bacterium does not normally multiply in food at room temperatures.

Salmonella cases grew steadily during the 1980s, peaking at over 35,000 per year in 1992, but have declined slightly since (Figure 3). The main one of (over 2,000) different 'sub-types' responsible for much of the increase is *S. enteritidis* phage type 4 (SePT4). The increase in human cases mirrors trends in infections among farm animals (particularly in poultry where control measures led to the slaughter of nearly 400 flocks (2 million infected birds) between 1989 and 1993). More recently, another subtype has emerged – *S. typhimurium* DT104 (*StDT104*) – in both animals (*StDT104* is now the most common *Salmonella* found in cattle) and humans (where infections have risen from around 800 in 1992 to 4,000 in 1996). In addition to causing food poisoning, this sub-type carries resistance to a wide range of commonly used antibiotics. *Salmonella* is also the most common source of general outbreaks of food poisoning, with poultry, eggs, red meat and meat products being among the most commonly implicated.

E. coli 0157 was virtually unknown prior to the 1980s, but since then, overall UK rates have risen to over 1,100 cases in 1996 (Figure 3). Although it affects far fewer people than either *Campylobacter* or *Salmonella*, it causes more serious illness and requires fewer numbers of bacteria to cause disease. Scotland shows the highest rate (9.5 cases per 100,000 population in 1996), followed by England and Wales (1.3) and then Northern Ireland (0.8). Scotland has also suffered a disproportionate number of outbreaks (24 between 1987-96), of which the worst was the 1996 outbreak in Central Scotland affecting 496 people, 20 of whom died – the largest total of deaths associated with any such outbreak worldwide.

The overall picture is thus of a large rise in food poisoning notifications, which now affect almost 100,000

Figure 1: UK notifications of food poisoning



people each year, with fatalities running at 100-200 annually. *Campylobacter* has replaced *Salmonella* as the predominant bacterium involved, and new threats are emerging in the form of *E. coli* 0157 and novel *Salmonella* sub-types (*SePT4*, *StDT104*).

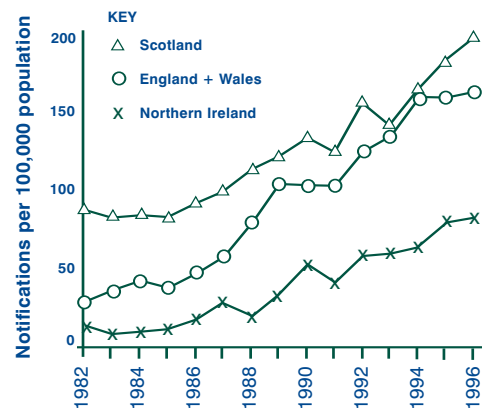
Underlying factors

The full report delves beneath the headline figures into what is actually driving the observed trends. The first question is how real are the increases revealed in Figure 1 – large numbers of cases of food poisoning go unrecorded, so changes in the reporting rate could lead to an apparent increase. When the detailed trends are examined however, there are few grounds for dismissing them, although it is possible that the real increase is not as large as the ‘headline’ rate of a five-fold increase in the last 15 years. The key to resolving this question lies in the results of a pilot study of the rates of infectious intestinal disease in 90 GP practices carried out in 1996. The results of this are being analysed but publication is not expected before the end of 1997/early 1998.

In the meantime, the apparent increases run counter to the increasing regulation of food production, processing, handling, retailing and sale outlets, and the extent of technology in the food chain. The full report finds no simple, single answer to this anomaly but some trends do appear more important than others.

Some important trends do seem to be linked to changes in agricultural sources. With *Salmonella*, upwards trends in specific sub-types isolated from humans have coincided with similar trends in the same sub-types among farm animals (eg, *SePT4* in

Figure 2: Notifications adjusted for population



poultry and *StDT104* in cattle). Links between human and farm animal infections with *E. coli* 0157 or *Campylobacter* (poultry is thought to be the source of around two thirds of human infections) also appear likely, though they remain unproven because of the lack of the necessary scientific data.⁴

In the slaughterhouse or abattoir poor hygiene can allow infection in one animal to spread to others. Various enquiries have shown much room for improvement, and a number of measures have been introduced to improve standards (see full report). The link between better hygiene in abattoirs and the microbiological quality of the meat produced is not however straightforward – recent research suggests that the very best abattoirs achieve no more than a 50 per cent reduction in bacterial count in meat compared to the very worst (relatively insignificant in microbiological terms). Even the most comprehensively optimised hygiene practices achieve only a fivefold reduction in count. On the other hand, meat from a faecally-soiled animal can have up to 1,000 times more bacteria than meat from a clean animal.

These findings underline the importance of taking a holistic view and of underpinning regulations with sound science. While MAFF are now assigning a high priority to animal cleanliness, EU regulations have contributed in the past to a substantial reduction in the number of abattoirs from 1,385 in 1975 to 384 in 1996, leading to substantial increases in the distance travelled from farm to abattoir, and associated stress and soiling of animals presented for slaughter. The above research shows that even small increases in the number of soiled animals could reverse any improve-

Figure 3: Laboratory reports of *Campylobacter*, *Salmonella* and *E.coli* 0157 (UK, 1980-96)

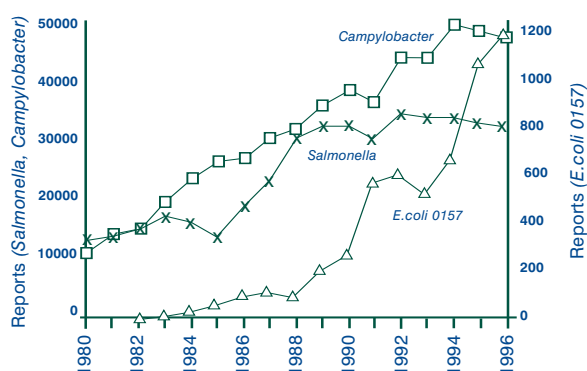
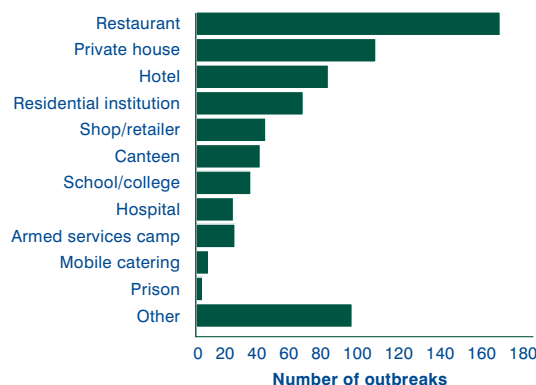


Figure 4: Sources of general outbreaks



ments in microbiological quality of meat resulting from the regulations, and the net effect may well have been the opposite of that intended.

The full report also looks at the complexity, scale and length of the modern food chain. In theory, the trend towards sourcing raw materials from all over the world, of lengthening shelf lives and distribution chains could all act to increase the potential for bacteria to grow. However while this may well open up extra opportunities in specific cases, this could not account for the large increase in *Campylobacter* food poisoning (because this bacterium does not generally grow in food).

The full report examines trends in origins of outbreaks (where they are traced back to their source) to see if they shed light on the most important sources in the food, catering and retail sectors (Figure 4) These show that 44 per cent of outbreaks originate from the consumer buying meals from restaurants, hotels and other catering establishments. In contrast, domestic catering accounted for 17 per cent of outbreaks and shops and retailers only 6 per cent. These statistics suggest that eating out remains a very important source of food poisoning, possibly dwarfing that originating from shops and retailers which are the current focus of concern following the *E. coli* outbreaks.⁵ A general lesson from the outbreaks data is that most were easily preventable, having arisen mainly from inappropriate storage, inadequate heating or cross-contamination.

Moving to the consumers themselves, the last 10-15 years have seen many changes which could have a bearing on food poisoning trends – more shop at supermarkets on a weekly (or less frequent) basis, relying increasingly on fridges and freezers to store food in the home; more people eat out; new products (eg, chilled foods) or preparation techniques (eg, microwaves) require storage and preparation instructions to be closely followed; some consumers want more ‘natural’ foods with fewer chemical preservatives; demographic trends may mean one meal being ‘stretched’ over days.

Despite highly publicised outbreaks traceable to the food industry, the vast majority of cases of food poisoning still affect individuals or small family groups and are thus very influenced by the practice of the consumers themselves. With the trends above however, the combinations of foods and circumstances which can give rise to a risk of food poisoning are increasing so that, if anything, consumers need to be more aware of the principles of food hygiene than in earlier years.

Reversing the trends

There are many changes underway or under consideration following recent enquiries (particularly from the Advisory Committee on the Microbiological Safety of Foods review of poultry meat and the Pennington Group review of the *E. coli* outbreak in Scotland). Measures to improve hygiene span the length of the food chain – from the ‘farm to the fork’.

On the farm:

- An awareness programme on the existence, potential prevalence and nature of *E. coli* 0157.
- The need for care in the use of untreated slurry and

animal manure.

- Minimising contamination in feed and improved hygiene in production systems.

In the slaughterhouse

- Clean animals/birds.
- Reduce scope for cross-contamination by better tools and machinery and training.
- Consideration of end-process treatments such as steam pasteurisation to kill bacteria.
- Better implementation of Hazard Analysis of Critical Control Points (HACCP).

Food processing, distribution and retail

The main approach here is through better implementation of HACCP, which the Pennington Review showed to be patchily applied – particularly in smaller outlets. Much emphasis is placed on HACCP’s application more generally through regulations and the underlying EU Directives (although the full report does point to some practical questions over implementing HACCP in smaller operations). Interim measures are under consideration to help tighten existing legislation – firstly, to clarify the position regarding which premises are intended to be covered by the Meat Products (Hygiene) Regulations 1994. Secondly, that selective licensing arrangements should be introduced for premises not covered by the clarified 1994 regulations.

On this last point, one current issue concerns the separation of cooked and raw meats in butchers shops, where complete physical separation (using different preparation areas, utensils, staff, etc) could be difficult and expensive to apply in smaller businesses, threatening their viability in some cases. The Government is consulting on how to strike a balance between the Pennington Group’s original proposals and their economic and social impact (which according to a survey by the Meat and Livestock Commission could be as much as £187m in capital costs and £160m a year in revenue costs in Great Britain).

Consumer issues

Despite improvements in hygiene, surveys show that food reaching the consumer still has a good chance of being contaminated (e.g. 33-41 per cent of chickens on retail sale are contaminated with *Salmonella*) and consumers need to always assume a potential for contamination. While surveys show that on the whole, consumers are aware of the main principles of food hygiene, they don’t always put them into practice – moreover, as discussed above, factors such as the emergence of *E. coli* 0157, increasing complexity of food technology, demands for ever longer shelf-lives, etc, demand high standards of hygiene from consumers, and more complex educational campaigns. In this context, general educational campaigns are likely to be of continuing importance (eg, MAFF’s Food Sense campaign and the annual National Food Safety Week), but there is continued debate over whether food hygiene education in schools is too dispersed

(eg, in science) or should have a single focus (as used to be the case within Home Economics).

Research issues

The full report shows the importance of sound science in defining regulatory strategy on the one hand and the major gaps which still exist in our knowledge of some of the underlying phenomena relevant to bacterial food poisoning on the other. Thus the exact origins of some of the organisms of current public health concern have not been established, there is no explanation of the major regional differences (Figure 2), and data to inform a strategy to reverse the rise of recent years is only starting to become available. The full report reviews the extensive R&D programmes supported by DH, MAFF and others (eg, MRC and BBSRC), and also developments in the private sector where science and technology may have a role in avoiding problems in the home – whether through intelligent packaging (which senses when it has not been safely stored) or antibacterial surface coatings. Other possible ‘technical fixes’ include interventions to reduce infections in animals (vaccines, competitive excluders, etc) and contamination in carcasses (eg, steam pasteurisation). Food irradiation remains a technology capable of eliminating bacteria in many foods at the point of retail sale.

The Food Standards Agency

Although the FSAs remit will be much wider than just bacterial food safety, the full report nevertheless looks at what lessons may be pertinent to the developing debate over the Agency’s remit, its structure, organisation and accountability. Some considerations which flow from the scientific analyses in this report include:

- As already mentioned, the importance of basing decisions on sound science may have implications for the structure of the Commission; members will need scientific skills rather than be there to represent different interest groups; and parallel concerns will be to understand both the scientific issues relating to risk and to develop a better public dialogue over how to address those risks.
- A point of scientific debate is whether the FSA’s remit should include nutrition. Those in favour point to the human cost of poor nutrition and the advantages of having one agency bring a coherent and consistent approach to all food issues. The counter view is that the agency should restrict itself to the primary consumer concern of food safety (issues such as BSE, and chemical and microbiological contamination), where its regulatory functions would be paramount, leaving nutrition with other health-based educational strategies with the Department of Health.
- How far the new structure is capable of addressing the ‘bottom line’. For instance:
 - would the FSA be better prepared against emerging threats such as *E. coli* 0157, *S. typhimurium* DT104, *S. enteritidis* PT4, etc?
 - would the FSA improve our knowledge of the most effective preventative strategies?
 - balances still need to be struck, eg, between con-

sumer and industry interests and between regulation, enforcement and costs. How would the FSA achieve a more objective balance, and avoid merely being seen as unbalanced in a different direction?

In conclusion

The full report confirms that the underlying drivers of increasing bacterial food poisoning are complex, and that a whole host of measures are in hand, proposed, or possible as a result of future research, ranging from wholesale reorganisation of regulatory structures (the FSA), through amendments to regulations and enforcement, to a myriad of potential technical measures at all stages of the food chain. In this mass of complexity, it is easy to become focused on process rather than outcome and lose sight of the over-all goal of reducing the levels of food poisoning. While many measures may take years to have an effect (if at all), there are some relatively simple measures which seem to stand out as offering particularly good value for money. For instance, at the farm/slaughterhouse end, dirty animals stand out clearly as one of the key (and most obvious) contributors to the contamination leaving the abattoir. The technology of irradiation could deal with much of the residual contamination on key foods such as chilled/frozen chickens (which still carry much bacterial contamination in the shops). Even in the home, the simple incorporation by manufacturers of thermometers in fridges would provide consumers with a source of information they simply lack at present and contribute to greater awareness of hygiene issues.

It is hoped that the full report will help parliamentarians find a route through the food safety maze and assist their contribution to the current debate. 

This article is a reprint of POSTNote 104: October 1997 (PostNotes are intended to give MPs an overview of issues arising from science and technology.) Parliamentary Copyright, 1997. Enquiries to POST, House of Commons, 7 Millbank, London SW1P 3JA.

Notes

1. The full report *Safer Eating* (80pp) is available from POST, 7 Millbank, London SW1P 3JA; free to Parliamentarians; £14 otherwise (contact Parliamentary Bookshop on 0171 219 3890).
2. To the Office for National Statistics (ONS) in England and Wales, the Scottish Centre for Infection and Environmental Health (SCIEH) and the Department of Health and Social Services in Northern Ireland (DHSSNI).
3. The Public Health Laboratory Services (PHLS) Communicable Disease Surveillance Centre (CDSC) in E&W, SCIEH, and DHSSNI.
4. With *E. coli*, the sub-type most commonly found in humans (*E. coli* 0157:H7) is also present in cattle, but there is no information on how infection rates vary from one region to another. With *Campylobacter*, it has been difficult to identify specific sub-types until recently.
5. However, outbreaks only account for 1 in 10 cases and the importance of eating out may reflect in part the relative ease of identifying it as a source of infection.

The ISO 14000 series – good for business?

Mubin Chowdhury AMIEnvSc

The drive to improve environmental standards in business has been steadily gaining momentum, as over 2,000 companies, on a global scale, have taken up the new series on environmental management set by the Geneva-based international organisation of standardisation or ISO.

The first of the ISO 14000 series incorporates ISO 14001 and ISO 14004 which deal with environmental management systems (EMS) and aid companies to control the impact of their activities, products and services on the environment. More specifically, ISO 14001 provides details as to the requirements for an environmental management system, while ISO 14004 lays down the elements for such a system and how they should be implemented.

However, critics believe that such standards provide nothing more than a rubber stamp for companies eager to improve their 'green' credentials.

But the benefits of such a system seem to be clear, and can include both economic and technical advantages, ranging from increased profitability to a more educated workforce.

For example, banks may provide more competitive loan arrangements to organisations with an EMS and

insurance costs could be lowered as the company or organisation with ISO certification would be less vulnerable to legal action.

Economic costs may also come down as a result of necessary improvements to the relative process design, as the company would have to address such issues as how much raw material they are using or how much energy they are utilising.

There is also the emphasis on a 'cradle to grave' approach; thus a company may require all involved in the supply chain to have proper ISO certification. This could, for example, affect not only the manufacturers, but also the service industries, distributors and transporters.

Thus, it seems that environmental management standards are one of the ways to help industry comply with environmental regulation and at the same time provide technical and economic benefits. Such standards not only provide a structured approach to setting environmental objectives and targets, but also a way of demonstrating continual environmental improvements as continual assessment, in the form of environmental audits, take effect and help accentuate the green credentials of the companies or organisations.



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Environmental Practice Committee: new members required

Women are especially welcome to address under-representation on IES committees.

The committee meets five times a year in central London.

It represents the interests of practising environmental professionals within IES and recent activities have included meetings programme publications setting up a CPD scheme and negotiating PI for IES members.

Wanted: computer whizz-kid (any age)

to administer IES web site.

Tasks will include:

- Developing the site.
- Regularly updating the site.
- Increasing environmental information on site.
- Improving its usefulness for IES members.
- Attracting new members via this medium.

If you are keen to have a go, please contact EPC Chairman, Richard Pagett:
Tel: 01793 771867, e-mail: advice@emt.u-net.com

Job vacancies

Demand for qualified environmental staff can be monitored by accessing the Environment Business Joblink service.

Joblink provides a comprehensive listing of environmental vacancies – abstracted twice a week from over 15 publications, and many unadvertised jobs.

Joblink is available in two ways:

- by faxback: just set your fax machine to poll/receive and dial 0374 507207, and press start/receive when prompted. An up-to-date list of all available jobs will be faxed straight back. Calls charged at standard national rates.
- All vacancies are also listed on the Environment Business Website: <http://www.ifi.co.uk>

Advertising

Advertisements are now accepted for inclusion in the **Journal**. They should be submitted to reach the Institution by the 7th of the month of publication. Rates: £50 (half page); £25 (quarter page); £12.50 (eighth page). Full page adverts at £100 can only be accepted under special circumstances, subject to space being available.

Diary dates 1998

17 June	Education Committee	10.30
17 June	Council	13.30
7 September	GP Committee	13.00
7 October	Education Committee	10.30
7 October	Council	13.30
12 November	GP Committee	13.00

Contributors

The *Environmental Scientist* aims to provide a forum for members' contributions reflecting their interests, activities and news, as well as topical feature articles. Feature articles should be no longer than 5000 words and other shorter contributions may be up to 1000 words. All submitted material should be received by the Editor (three weeks prior to publication in the last week of January, March, May, July, September and November) at 25 Kennedy Avenue, Huddersfield, West Yorkshire, HD2 2HH; telephone 01484-426796, fax 01484-546640. **Views expressed in this journal are those of the authors and do not necessarily reflect IES views or policy.**

