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FEATURE ARTICLES

The SIGMA Project: sustainability in practice

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Introduction

Over the past decade there has been an explosion of interest in the literature surrounding the many aspects of the sustainability debate. In spite of this there has been relatively little progress in putting the concept into practice. Theoretical arguments and technical uncertainties continue to hinder the progress that is being made; mainly because of political manoeuvring on the part of all stakeholders and resistance to fundamental change in the way we think about the environment.

A number of organisations and initiatives have recently recognised that eventually we must make the leap from debating sustainability to implementing strategies to move towards it. The SIGMA Project is currently putting this principle into practice, through a partnership with major UK businesses. The SIGMA approach recognises that although we are faced with an enormous amount of uncertainty, only through rigorous testing and piloting our theories will we find ways to make real progress towards the goal. All of this sounds like a rather grand experiment, but we can hardly afford to continue with the current one, which looks at just how far we can push the Earth's basic cycles of nature before we irrevocably ruin the planet.

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What is the SIGMA Project?

The SIGMA Project – Sustainability - Integrated Guidelines for Management – was launched in 1999 by the British Standards Institution, Forum for the Future, and AccountAbility, and is primarily funded by the UK Department of Trade and Industry (DTI). Now enhanced by a vast diversity of organisations within steering and stakeholder groups, the SIGMA Project is developing a systematic framework to enable organisations to become more sustainable.

The SIGMA Project aims, quite simply, to help organisations (irrespective of size or sector) to address sustainability issues in an integrated way and to improve their performance on social, eco-

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conomic and environmental issues. The project is developing an approach to the management of organisational sustainability that aims to free the logjam that currently stands between understanding and action in many organisations.

At the heart of the SIGMA Project is the development of a set of guidelines, based on a series of inter-linking and supporting components. These are:

- A set of **principles** that help an organisation to understand and navigate the parameters of sustainability.
- A **management framework** that integrates sustainability issues into core processes and mainstream decision-making.
- A series of **tools** and approaches which organisations can use to implement effective strategies, initiate culture change, promote learning, set objectives, and then achieve them.

The SIGMA Guidelines aim to help organisations to

address the challenges of sustainable development by:

- integrating social, environmental and economic issues into core management processes and mainstream decision-making;
- building a competitive advantage by projecting a defined stance on social, environmental and economic issues;
- identifying and learning about the impacts and risks of their activities;
- preventing, removing, minimising or managing these risks and impacts;
- identifying opportunities for continuously improving performance in relation to these impacts;
- engaging stakeholders in decision-making processes;
- using appropriate, practical and robust indicators.

The SIGMA Project is UK-based and involves the participation of a number of UK organisations, many of which are multinationals. The global significance of sustainability makes it vital that SIGMA works in concert with existing sustainability initiatives in other parts of the world and adopts existing best practice drawn from around the globe.

The project is working closely with other existing sustainability initiatives, most notably the Global Reporting Initiative (GRI) and more recently the World Business Council for Sustainable Development (WBCSD) – another partnership we believe will bring great benefits to the Project. We aim to ensure that this pilot version of the SIGMA Guidelines encapsulates the GRI approach to performance measurement and reporting, whilst providing a management framework that facilitates organisational action on sustainability issues and supports the GRI's objectives. We have also drawn from systems including The Natural Step, AA 1000 and a range of management standards from the International Organisation for Standardisation (ISO).

Progress so far

The SIGMA Project is overseen by three national organisations – Forum for the Future, a leading sustainabil-

ity consultancy and think tank, the British Standards Institution (BSI), the world's leading standards organisation and the Institute of Social and Ethical Accountability (AccountAbility) – a world-wide cross-sectoral professional institute. The project has successfully evolved and enlarged its scope with the expert guidance of the project partners, and with strategic support from representatives of the Department of Trade and Industry (DTI) and the Department for Environment, Food and Rural Affairs (DEFRA).

From the outset the SIGMA Project was conceived as evolving through a series of phases. Phase 1 took place between July 1999 and April 2000. The key activities of Phase 1 are summarised below:

- The **establishment of the Project Management Team**, including the recruitment of a full-time Project Director.
- The setting-up of a **multi-stakeholder Project Steering Group** to provide advice and strategic direction to the Project Management Team.
- A **global research and mapping exercise** of existing initiatives, tools and standards in the social, economic and environmental fields to map existing best practice. This was followed by a gap analysis to identify where new work would be required as part of the SIGMA Project.
- The **recruitment of a consortium of 20 organisations** (our Organisational Partners) to pilot the SIGMA Guidelines as they were developed.
- **Initial consultations** with a wide range of stakeholders who were invited to contribute their expertise to the SIGMA Project and comment on the SIGMA Guidelines as they evolved.
- The **1st SIGMA Conference** held at DTI's Conference Centre in London for participating organisations and key stakeholders to review the progress made so far and map out the development programme for Phase 2 of the SIGMA Project.

Phase 2 of the project began in May 2001 and is ongoing. This phase involves the live piloting phase and further development of the stakeholders' engagement process. The principal activities are set out below:

- **Commissioning and managing new R&D projects:** eight R&D projects have been undertaken and have helped to inform the development of the SIGMA Guidelines.
- **'Live piloting' of the SIGMA Guidelines with Organisational Partners:** two pilot programmes are currently scheduled within Phase 2. The first commenced on 1 June 2001 and will be completed on 31 May 2002. The second shorter pilot programme is due to commence in October 2002 and will run until 28 February 2003. This pilot will be working to a revision of the SIGMA Guidelines derived from the experience of the first pilot programme, the outputs from working groups and ongoing dialogue with our stakeholders.
- **Building and enhancing stakeholder dialogue:** through a range of different approaches including face-to-face 'Open to Inquiry' events, 'Sustainability in Practice' workshops, networking seminars, annual conferences and web-based chat and dialogue.

- **Liaising and working with other sustainability initiatives:** the SIGMA Project seeks to actively engage with other sustainability initiatives world-wide to understand and maximise the opportunities for synergies and collaborative working. Some representatives from other initiatives sit on the Project Steering Group whilst others, such as the Global Reporting Initiative, play an active role in harmonising SIGMA outputs with existing infrastructure.
- **Establishing and maintaining the project web-site:** an important part of our global communication and information strategy revolves around the project web-site (www.projectsigma.com) launched in January 2001 at the Science Museum in London. We are constantly looking for ways to improve the web-site and its functionality.
- **Working with Collaborative Partners overseas:** the SIGMA Project is always looking for collaborative partners in other countries in order to avoid any duplication of effort, harness overseas expertise and internationalise the SIGMA approach. Collaborative Partners bring with them new perspectives on sustainability, organisations prepared to test the SIGMA Guidelines in different business cultures and the ability to spread the development workload.

To date the project has brought together four key requirements that support the main objective of putting ‘sustainability into practice’. These are:

1. A business case for sustainable development.
3. A widely agreed set of basic principles for sustainability.
4. An integrated, practical management framework for implementing the principles.
5. A flexible ready-to-use set of tools, linked to the management framework.

These four elements provide the basis of the SIGMA Guidelines. The basic structure of the SIGMA Guidelines is set out in Figure 1 (below).

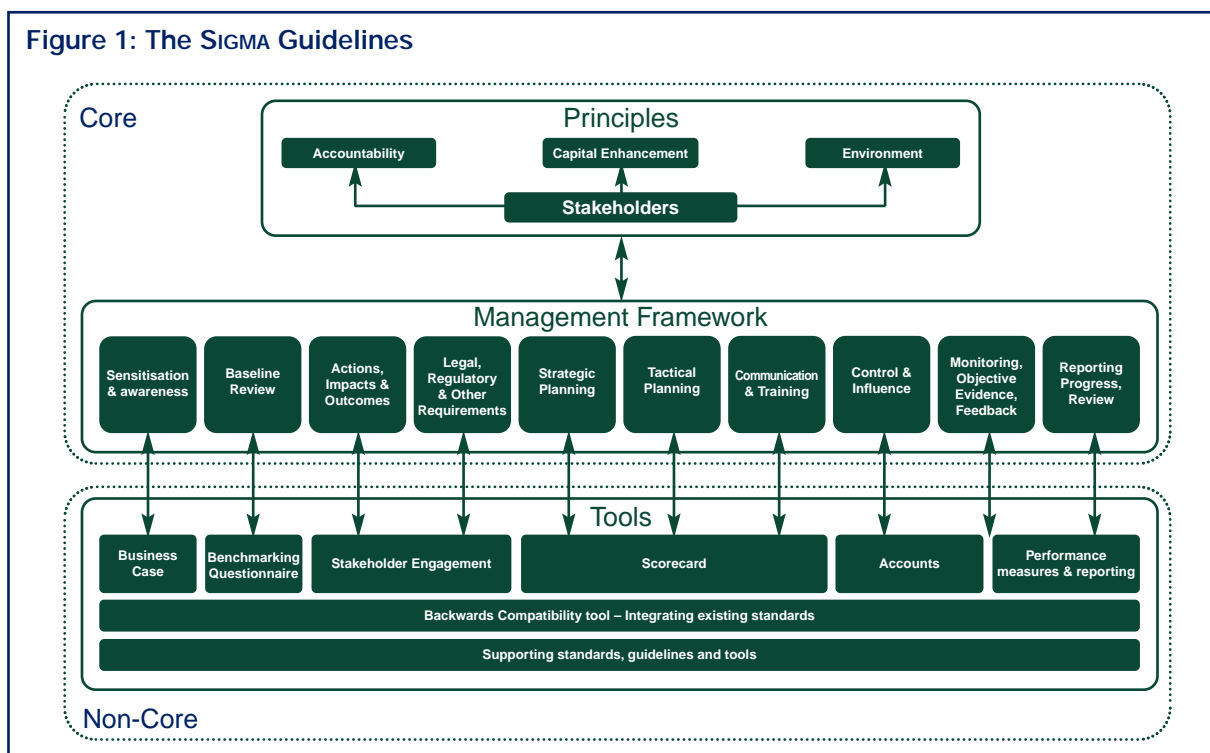
The guidelines can be accessed on the web site at www.projectsigma.com A large part of the guidelines is composed of tools and techniques, which may appear daunting, but offers a diverse range of well-tried and new techniques.

The piloting phase


Putting the guidelines to the test is the current phase of the project. All Organisational (Business) Partners are now actively pursuing a number of initiatives within their respective organisations to pilot the guidelines. Initially, each organisation carried out a baseline review to establish its respective values, strategies and performance with regard to sustainability. The next stage involves trials in the context of a specific activity or operation. Examples include applying the environmental accounting tool (a social accounting framework is also currently under development); enhancing stakeholder dialogue; and influencing the supply chain. All of the partners are experienced in environmental leadership, have extensive and often wide-ranging partnerships or joint ventures and most are involved in some substantial supply chain management. Consequently the SIGMA Project is seen as a way for all partners to learn, share and innovate through the live piloting phase. Monitoring of the pilot will involve all partners and the project management team through a detailed assessment of progress against a set of key performance indicators specifically designed to measure impact against the key components of the SIGMA Guidelines.

Future developments

A major strand of the project concerns stakeholder engagement. A number of unique features of this process will be implemented in the next stage of the project. The aim is to support a number of key stakeholders in their knowledge and understanding of the project. It will involve invitations to ‘Sustainability in



Practice' workshops, so that participants can learn first-hand about aspects of the guidelines that are of most interest to them and their organisations. Specific groups are being targeted, namely trade associations, professional bodies, NGOs and key sector groups like financial services, construction and pharmaceuticals. Participants will be able to meet with members of the Project Implementation Teams and discuss how elements of the pilot guidelines are working in practice.

The project is also rolling out the Open to Inquiry dialogue process within a number of the business partner organisations. Further details of these and other events are available from the project team. 

■ Contact: Fiona Gibbons, the SIGMA Project Manager by e-mail at fiona.gibbons@bsi-global.com or by telephone on 0208 996 7665. To gain a better understanding of the project please visit the project web site at www.projectsigma.com

Fishery policy: the case for change

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Introduction

Some elements of the Common Fisheries Policy (CFP) expire, or require renewal, by the end of 2002. The time has also been seized as an opportunity to review the operations and future of the CFP. The Commission is required to produce a report and proposals for the European Parliament and the Council of Ministers by 31 December 2001. By the end of 2002, the Council will decide on any necessary adjustments to current arrangements.

The Commission's Green Paper, 'Review of the Common Fisheries Policy' (COM(2001)135), was published in March 2001, and the Government initiated consultations on the Green Paper and on ways forward for the CFP.

The Green Paper gives a critique of the current arrangements for fisheries, and proposes ways forward. Its analysis centres around ten main areas:

- a) the state of the main fish stocks;
- b) the environmental dimension;
- c) fleet policy;
- d) decision-making processes and stakeholder involvement;
- e) monitoring and control;
- f) the economic and social dimension of the CFP;
- g) aquaculture;
- h) the processing industry;
- i) the international dimension of the CFP;
- j) Mediterranean fisheries.

The Government has set out its priorities for the Review of the CFP. Many of these objectives are reflected in the Green Paper. These priorities are:

- a) to work for a CFP which is environmentally and economically sustainable;
- b) to strengthen the CFP's regional dimension, increase industry involvement in decisions on fisheries management and conservation and improve the dialogue between fishermen and scientists;
- c) to increase the integration of environmental concerns into fisheries management;
- d) to introduce clearer procedures for responding quickly to conservation emergencies;
- e) to confirm the 6 and 12 mile access restrictions on a permanent basis, continue relative stability (includ-

ing Hague Preference) and retain the Shetland Box; f) to ensure greater effectiveness and consistency in control and enforcement of EU requirements, while attempting to simplify the burden of control on fishermen;

g) to improve value for money of third country agreements and their coherence with development and environmental objectives and to promote the effective operation of Regional Fisheries Organisations.

This article touches on several of these areas. In particular: the poor state of stocks and the reason for it; the new environmental dimension to fisheries management; and the interaction between scientists and fishing communities.

The state of our fish stocks

The traditional applied role of fisheries science is to advise on the current and desirable state of fish populations (called stocks), and the consequences of various management options.

Of the 34 stocks of fish which account for over 85 per cent of the UK's landings half are 'outside of safe biological limits'. The sustainability of these stocks is put in question. They include well known and important stocks, such as North Sea cod, North Sea plaice, Channel plaice and sole, Irish Sea cod and whiting, West of Scotland whiting, and other saithe and herring stocks.

In the seas of the North-eastern North Atlantic, over 60 per cent of stocks are fished in excess of that needed to maximise production. If you take account of fishing costs, then almost all are fished uneconomically. Fishing at lower rates would yield in the long-term: larger and safer stocks, higher catch rates, greater stability of Total Allowable Catches (TACs), and higher profitability.

The main reason for the low abundance of fish stocks is the high level of fishing mortality caused by excessive international fishing capacity, and fishing effort (i.e. that component of the capacity used at sea), compared with the size of the resource.

There are additional factors for some stocks. Taking the North Sea cod as an example: recent minimum cod-end mesh size for North Sea roundfish has been 100 mm. This mesh will retain cod from the middle of their first year of life. By age 4 years, still only 60 per cent

of the cod are mature. At these fishing rates and mesh size, only about 1 per cent of age 1 cod will survive to spawn at age 5. Cod are caught too small and at too young an age.

The environment has also turned against the cod. Influenced by the quasi-cyclic North Atlantic Oscillation, the North Sea has warmed. This is less favourable for the survival of young cod. Average 'recruitment' of young cod has declined by 2/3 as the NAO index has decreased over the past two decades.

But why not have much larger mesh in cod-ends? It can be done, but there are real problems. This year, it has taken six months for the EU Commission and Norway to agree that cod-end mesh for North Sea cod be increased from 100 mm to 120 mm.

The problem is that mesh sizes large enough to ensure cod are left to mature before capture would be over 200 mm. Such cod-ends would effectively retain no whiting or haddock. In the North Sea, these fish are largely caught together with cod in mixed fisheries. In some fisheries these fish are economically more important than the cod.

Even with a modest increase to 120 mm, catches of, and hence income from, whiting would be depressed by 50 per cent initially and remain less than current levels. Short term losses of haddock would also be about 20 per cent. Some benefits would also be lost as more whiting would prey on small codling and haddock.

With larger mesh sizes, costs of capture would be unaltered. Economic inefficiencies in the system would remain. There is no point in having vessels fishing the North Sea and retaining no fish.

The key to better (i.e. more sustainable and more profitable) fisheries is less deployed fishing effort. But it has to be permanently less, and it has to be international. Permanent reductions of the order of 25-50 per cent need to be contemplated.

The emerging environmental dimension

Greater integration of environmental and resource management is a priority of the government, not least reflected in the creation of the new Department for Environment, Food and Rural Affairs. Greater integration of marine environment and fisheries management is a priority of both the government and the Commission. Such integration is required under various instruments, *inter alia*, Articles 6 and 174 of the European Community Treaty, the FAO Code of Conduct for Responsible Fisheries, Agenda 21, and the Agreement of North Sea Environment and Fisheries Ministers.

In parallel, the 1992 Oslo and Paris [OSPAR] Convention has been recently modified to include 'The Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area'.

Scientifically we have made significant advances, over the past decade, in our understanding of the role of fishing in altering the marine ecosystems. Especially of the role of trawling in changing the benthos.

Managers have also taken actions with environmental and ecosystem considerations to the fore. The recent closure of the sandeel fishery, off the UK's north-east coast, was to ensure adequate food for other predators,

such as seabirds.

However a more specific policy response to the general wish for greater integration is still being developed. Particular issues, such as by-catch of small cetaceans in fishing gears will be addressed. It is the wider context that is a current challenge, sometimes termed an Ecosystem Approach to Fisheries Management.

One interpretation of an Ecosystem Approach to Fisheries Management is:

An ecosystem approach to fisheries management seeks to identify and implement management approaches which help limit the impact of fishing on species and habitats, in order both to secure the sustainability of commercial fish stocks and fisheries and to maintain specific attributes of the ecosystem, such as overall productivity and diversity. Decisions on appropriate management actions will need to take into account environmental change.

This is in contrast to the current OSPAR approach which is tending towards setting 'targets' for large parts of the ecosystem. For some of the physical and chemical components (e.g. nutrient levels to restrict eutrophication) this may be quite appropriate. However, for some of the flora and fauna, and their ecological relationships and biodiversity, this may be too prescriptive given our level of understanding of the marine ecology and its natural variations.

The science is advancing, but managers may well have to make decisions before the science is well developed.

Science will face many challenges. It needs to improve rapidly its understanding of the key elements in the functioning of the marine ecosystems. It will need to help managers ensure that the ecosystem is not damaged. It will need to help to ensure that unnecessary restrictions are not placed in the way of industry.

A good example of the latter is the totem of Closed Areas or Marine Protected Areas. There is a strong demand for marine closed areas. For the protection of rare, sessile and vulnerable forms, Closed Areas may be the only solution. They also contribute to solve other problems. But generally a Closed Area is a tool to achieve something, and not an end in itself.

Scientists and the fishing communities

In my experience the relationships between fishermen and fisheries scientists has been good. Many of us live in the same small communities. We share the memories of when the docks of Hull and Grimsby were full of distant water boats. To many of us, fish and fisheries is not just an academic discipline. This culture is changing though, as scientists become more specialised and are more mobile.

However, when TACs are set each year the relationship can be severely strained. Fishermen feel that the scientists give their advice, from the inter-governmental organisation the International Council for Exploration of the Sea (ICES), to the Commission, and apart from minor alterations the advice gets turned into TACs and cuts in their livelihood.

The government, and the Commission Green Paper, are keen to stress the need for responsiveness and transparency of the scientific process.

In the UK, we are working hard already. We brief the industry on the advice of TACs, we talk to groups of fishermen around the coast, we are involved in a joint fishermen-managers-scientists Conservation Group which discusses technical management measures, we discuss the R&D programme with the industry, they are invited on our research vessel monitoring surveys to enhance confidence. We publish in *Fishing News*.

We are doing more, in attempting to encourage the International Council for Exploration of the Sea (ICES) to be more transparent, sensitive and accessible to its stakeholders, and in supporting regional meetings such as the North Sea Forum.

We welcome the Commission's commitment to facilitate such regional discussions.

Notwithstanding the inherent goodwill on both

sides, the relationship will inevitably be strained whilst fish stocks are in such a poor condition; fishing effort is high; profitability in the demersal segments is low; misreporting is undermining the credibility of stock-assessments; and scientists continue to advise significant cuts in TACs and fishing effort.

Conclusion

Whilst there are many improvements that can be made to the CFP, and whilst the environmental dimension will be an increasing challenge, the single most important factor for the future sustainability of fisheries is the need to reduce significantly, and permanently, the size of the international fishing fleets. 🌳🌳

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Waste minimisation clubs in the UK: key issues for possible future developments

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1. Resource efficiency/waste minimisation

Waste Strategy 2000 sets out the UK Government's vision for waste management in England and Wales. By encouraging close working relationships between a range of partners, the UK Government plans to stimulate the uptake of sustainable waste management so as to help create a more sustainable society.

Waste arisings

The scale of the problem is huge. The amount of waste produced in England and Wales annually is around 400 million tonnes. The components are:

- Industrial waste is 48 million tonnes.
- Commercial waste is 30 million tonnes.
- Municipal solid waste is 28 million tonnes.
- The remaining 300 million is composed of construction, agricultural, etc.

The estimated totals for different industry/commercial sectors have been estimated. For industry the two largest waste producers are:

- Chemicals, rubber and mineral products at 9 million tonnes.
- Food, drink and tobacco at 8 million tonnes.

Despite progress in recovery and recycling only some 40 per cent of industrial and commercial waste is recovered. The remaining 60 per cent is disposed of, mainly to landfill.

Sustainable development

A Better Quality of Life sets out the UK Government's sustainable development strategy. This strategy rests on

four key elements:

- Prudent use of natural resources.
- Effective protection of the environment.
- High and stable levels of economic growth and employment.
- Social progress that meets the need of everyone.

The way that waste is managed is an important contribution to the strategy. Waste is the loss of valuable, scarce resources. Excessive waste production is not a prudent use of resources. It also leads to decreased competitiveness by industry and so reduces levels of economic growth. Waste is a potential hazard to the environment; excessive production means the need for a range of sophisticated, expensive management methods to protect the natural environment and human health

Sustainable waste management

The key to sustainable waste management is based around the Waste Hierarchy. Waste reduction is top of the Hierarchy and disposal at the bottom. Sustainable waste management encourages all sectors to reduce the amount of waste produced in the first place.

Waste management decisions are made in the light of the Waste Hierarchy and at the same time consider the Best Practical Environmental Option and the Proximity Principle. Rather than relying on production and consumption processes that are usually linear, with raw materials used to make a product that is used once and discarded, in the future we will need to develop cyclical production and consumption processes that reduce the use of raw materials and avoid the need for disposal to landfill.

2. Waste reduction in industry/commerce (waste minimisation clubs)

Waste production is often the result of inefficiencies in production or management processes. One very good reason why companies should reduce their waste production is the cost involved. Waste costs for many manufacturing companies are often 4 per cent of turnover – often the profit margin of the company. Reducing waste leads to improved profits without increasing sales.

Waste minimisation clubs have been a means of organising companies to tackle their waste problems. Envirowise (formerly ETBPP) estimate that there have been around 150 such clubs across the UK since 1992. This number must be treated with some caution as the success or otherwise of the club is rarely considered.

There are a range of models for club structure. These include:

- **Demonstration** – very significant external funding, often run by consultancies.
- **Facilitated Self Help** – limited external funding to provide club management (the most popular).
- **Self Help** – no external funding, often run by industry sector groups.
- **Distance Learning** – organised via the Internet.

The first generation of waste minimisation clubs have been an excellent vehicle for the adoption of sustainable waste management practice by companies. They have on the whole:

- Demonstrated that large financial savings can be made at little cost.
- Reduced gaseous, liquid and solid waste arisings for companies.
- Produced case studies of Best Practice.
- Improved company image.
- Been an encouragement for MSW campaigns in the same area.

Research has shown there is the need for a range of new developments in waste minimisation clubs so as to build upon the Best Practice developed so far.

Waste minimisation clubs commenced in the UK in the early 1990s. Surprisingly, there are very few research groups that have investigated their performance. This remains a very fertile area for academic and professional research. There are a few points to make:

Number of clubs

At the present time (late 2000) Envirowise signal up around 150 clubs. This has to be taken with some caution as:

- The list is not exhaustive with many developments not being included.
- Many of the clubs (more than 30 per cent) have not proceeded to a satisfactory conclusion and produced an extensive final report.
- Some of the mentioned clubs have never even started.

It is probably fair to say that only some 40 per cent have been 'successful' in any meaningful way. That would indicate a number approaching 60 in over nine years.

The ratio of planned clubs to those that eventually

form is around 7:1. This means that possibly some 1,000 have been planned in some way across the UK. The reasons for such marked lack of development need to be thoroughly investigated.

Number of companies

Despite the publicity given to the clubs even Envirowise claim that only somewhere near 1,300 companies have been part of such developments. Assuming that the number has increased over time to some 1,500, it is in fact an extremely small percentage of UK industry. Analysis of the numbers of companies in each club and an examination of the club reports (where available) would indicate that only some 700 have undergone any significant training and success. This must be put in the perspective of Northamptonshire alone having somewhere near 19,000 VAT-registered companies. The percentage of UK companies that have undergone successful waste minimisation training through clubs is less than 0.3 per cent of the total.

Regional distribution

The distribution of clubs across the regions of the UK is not homogeneous. Certain regions e.g. North-West, have a much higher ratio of club development per unit than others e.g. North-East and London. The trend is not simplistic and there are a number of factors that underlie it. One of the most significant factors is the driving role of consultants (Service Providers). At the present, there is very little national organisation of clubs and certain regions/areas with even Objective 1 funding are lacking concerted, integrated development.

The ratio of Rural to Urban is also an area of concern. Rural areas often lag behind in club development due to the distances required to be travelled. This shows a lack of innovation on the part of key drivers. Such clubs could be based around distance learning/activity material.

3. Future club development

Some identified key issues arising from a review of academic journals:

(i) **Cleaner production** is very applicable to multi-step production routes. The design methodology to be applied must take account of a wider range of issues, including the variability of waste loads and material composition. Mathematical programming can be used in such cases of marked uncertainty. This approach is very applicable to say the chemical industry and has yet to percolate fully into UK SMEs working in a number of suitable fields.

Ref: R.F. Dunn, *et al* (2000), Using process integration technology for cleaner production, *Journal of Cleaner Production*, 9, 1, 1-23.

(ii) There is a substantial literature that comments on **Efficiency Indices**. The methodology of these is well developed, mostly in areas of resource economics. It is vital that in the UK we come to adopt a standard internationally accepted measure of Efficiency Indices that measure the impact of a firm's performance in relation to environmental regulations.

Ref: D. Tyteca, (1996), On the measurement of the Environmental Performance of Firms – A literature review and productive efficiency perspective, *Journal of Environmental Management*, 46, 281-308.

(iii) **Total Assessment Audit (TAA)** research has shown the need to integrate, energy, waste and productivity audits. The audits must also incorporate the input from senior management and so take regard of the inherent, interrelated operational constraints. TAA emphasises the holistic approach and considers areas such as management practice, employee training and all human resource issues.

Ref: W.G. Haman, (2000) Total Assessment Audits (TAA) in Iowa, *Resources, Conservation and Recycling*, 28, 185-198.

(iv) **Co-operation between technicians and accountants.** A growing number of research groups across the world, mostly in the area of resource economics, have been investigating the barriers to the reduction of corporate environmental costs via resource efficiency. It has been proposed that resource efficiency programmes impact strongly upon corporate costs in the long term when there is co-ordinated co-operation between technicians and economists/accountants in a firm. There are a number of cases where a checklist for a given systematic approach is recommended to encourage this co-operation.

Ref: H. Dimitroff-Regatshnig *et al* (1998), A technoeconomic approach to link waste minimisation technologies with the reduction of corporate environmental costs: effects on the resource and energy efficiency of production, *Journal of Cleaner Production*, 6, 213-225.

(v) **Environmental Management Systems (EMS).** There has been concern that the correlation between EMS and waste minimisation is not as strong as has been expected. Research has shown that in SMEs using an EMS, emphasis upon the costs of raw materials alone can divert attention from waste costs. The SMEs studied placed overt attention to the EMS rather than question the value of the outcomes.

Ref: M. Ilomaki *et al* (2001), Waste minimisation in small and medium sized enterprises – do environmental management systems help? *Journal of Cleaner Production*, 9,1, 209-217.

(vi) **Learning Curve.** There has been very little emphasis upon the nature of learning that takes place within resource efficiency projects. Research on Total Quality Management has investigated the link between different types of learning and quality improvement. Only 25 per cent of learning accelerated waste reduction. The other 75 per cent either did not impact on waste reduction or impeded it. In complex and dynamic situations learning that is based upon know-why and know-how can facilitate waste reduction.

Ref: M. A. Lapre, *et al* (2000), Behind the learning curve: linking learning activities to waste reduction, *Management Science*, 46, 5, 597-611.

(vii) **The Entrepreneur.** The nature of the company in a club is vital. Research has suggested that those that are run by entrepreneurs are probably more likely to seize the opportunity to reduce costs than oth-

ers with a more traditional ownership/management structure that is based around Poor Environmental Practice and that is locally owned. There is a need to target companies that are run by those with entrepreneurial intentions, as they are more likely to value the cost reduction benefits. There is also a need to explore the development of entrepreneurial intentions and how to utilise them in club activity.

Ref: N. F. Krueger, *et al* (2000), Competing models of entrepreneurial intentions, *Journal of Business Venturing*, 15, 411-431.

(viii) **Just in Time (JIT)** methodology. JIT is a formalised process to reduce waste in a company, and it has achieved a strong foothold in the manufacturing sector in some countries – not extensively in the UK. JIT focuses on the process, not the product of a company, and can be applied to any process in a range of sectors. There are a number of sectors across the global economy that have not really adopted JIT, these include the retail sector that would benefit from waste reduction activities via JIT.

Ref: C. Canel, *et al* (2000), Just-in-time is not for manufacturing: a service perspective, *Industrial Management and Data Systems*, 100, 2, 51-60.

Club formation

1. The **catalyst** for club formation is a strong, inclusive local partnership based around the influence of the Environment Agency. The club should contain representatives of:

- Environment Agency
- WDA
- WCAs
- Small Business Service
- Government Office
- Local University/College
- Envirowise
- Agenda 21
- Green Business Clubs, etc.

2. Clubs must be based around a model that is best suited to the:

- Finance available
- Local and regional characteristics
- Sectors involved
- Number of companies involved
- Regional and Local Plans.

This can only be done after a rigorous **research programme** about local needs and opportunities.

Essential club requirements

3. Clubs must **audit** and report **solid waste reductions**. Most clubs merely report financial savings and rarely report solid waste reductions. Future clubs must audit solid waste as well as water and energy as well as considering gaseous emissions. The **LWMI** was one of the few clubs to audit and report on solid wastes. The opportunity techniques for reducing solid wastes and their disposal must also be integral to any reporting.

4. Clubs must contribute to **Benchmarking** data for industry/commerce sectors. Clubs must also work with Envirowise and the Environment Agency to use Benchmark information to plan their activities.

5. Clubs must consider ways to work with the **Waste and Resources Action Programme (WRAP)**. The creation of markets for recycled materials will reduce waste disposal and help create new employment. Strong linkage must be made to funding streams that are available to help the creation of new businesses e.g. Prince's Trust. Information on this can often be supplied by the local Small Business Service.

6. Clubs must work closely with local Re-use groupings. Much can be done with the re-use of computers, electrical goods, unwanted material that is often disposed of. Such activities help create local employment, especially via Re-manufacture. Clubs need to be the focus for local resource (waste) exchanges, especially those that are based on Internet sites. The national picture for resource exchanges is very patchy. In some areas of England the Environment Agency 'allow' limited forms of exchanges to occur, in others they are less pro-active. This regional variation is not helpful.

7. Clubs must be based upon Certified Training so as to encourage Life Long Learning and contribute to Continuing Professional Development. Training should be at NVQ 2-5 and must occur in a variety of forms, often based around short (1 hour) sessions.

8. Clubs must be supported by a range of Local Partners. The most successful recent clubs have been supported by a partnership of the local WDA and WCAs working closely with Envirowise, Small Business Service, a university and schools and the voluntary sector. These powerful local partnerships have used the great success of such clubs to initiate a wide range of new and dynamic initiatives for waste reduction and job creation. There is a need for a Regional Waste Minimisation Champion that can be called on for advice at all stages.

9. Clubs must plan to be holistic and incorporate activities with the schools and the general public

10. Clubs must make more use of Internet sites to disseminate while they are in progress.

11. Clubs must develop an Exit Strategy that rolls out a long term action plan for the uptake of waste minimisation for that geographical area.

Important club requirements

12. Clubs should consider the introduction of a Mass balance methodology in all auditing.

13. Clubs should consider the enhanced uptake of Eco-design. Here, more goods are made with fewer resources. Local Universities / Colleges are often excellent centres of advice in such matters.

14. Clubs should strongly support Making a Corporate Commitment (MACC). MACC focuses on resource efficiency and provides a practical tool to encourage commitment at all levels in a company through setting targets and reporting on these.

15. Clubs should encourage the adoption of Environmental Management Systems.

16. Clubs should encourage companies to produce Business Environmental Reports by all sectors.

17. Clubs should encourage the development of Consumer Marketing and Information Programmes and more effective product labelling.


18. Clubs should encourage the utilisation of Life Cycle Assessment in business processes.

19. Clubs should utilise the services of Trade Unions and Sector Groupings.

20. Clubs need to run at least two years to ensure that the majority of waste reduction opportunities with Payback Periods of more than one year are implemented. SMEs are often reluctant to implement opportunities with Payback Periods greater than six months. Because of this they often ignore Clean Technology. To support this clubs must utilise the services of the Joint Environmental Marketing Unit (JEMU). Research on all the clubs suggests that only some 20 per cent of possible annual savings are implemented in the first year.

21. There is the need for standard UK guidance on the final report. This must include:

- Full company details that are available in the public domain, e.g. workforce, turnover, etc.
- Audited waste stream reductions, based on a standard methodology.
- Financial savings – here there is a great need for guidance and a standard methodology.
- Evaluation and Review – based upon standard guidance.
- Key lessons.
- Exit strategy.

The report should be available on an Internet site or could be emailed as an attachment on request. To that end there needs to be clear guidance as to the size of the report. 

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Renewable energy target likely to be missed

Despite a recent rush of companies planning to develop wind power projects, the government is likely to miss its objective of 10 per cent of the UK's energy being generated from renewable resources by 2010.

In August ScottishPower announced plans to build Britain's largest wind farm in a £150m project on a bleak moor south of Glasgow, which would generate 240 megawatts (MW) of power by 2003. On the same day, the environmental action group Greenpeace announced its collaboration with electricity generator Innogy to market renewable energy to its database of 200,000 supporters. And automotive engineering group Mayflower announced its intention to start installing and maintaining offshore wind turbines.

The elements for exploiting wind

power are favourable in the UK, but only 400MW of electricity are produced here compared to 12,000MW in Europe, with Germany and Denmark leading the world.

Only 2.7 per cent of total energy production in the UK comes from a renewable resource, with all forms, including hydropower, taken into account. Wind farms remain relatively inefficient: while traditional generating plants run flat out for 80 per cent of their life, wind farms can at best hope for 35 per cent.

Currently the government guarantees through subsidy that the electricity generated by wind power can be sold at the same price as that generated by cheaper energy sources. But land-based wind farms require acres of open space and face opposition from local community

and amenity groups and planning authorities, such that it could take up to 20 years for wind power to represent 10 per cent of renewable energy in the UK, without a coherent planning framework in place.

In the meantime, the Department of Trade and Industry has indicated it will encourage a revival of nuclear power with the claim that new power stations could be economic.

But building and extending Britain's nuclear plants, responsible for 25 per cent of non-carbon dioxide emitting electricity and rapidly approaching the age of decommissioning, can only form part of an energy solution. Further, the projected decline of North Sea hydrocarbon production from 2004 suggests that both oil and gas will increasingly be imported from Europe, Russia, the Middle East and North Africa.

Hedgehogs behaving badly

Some seabird species in the Outer Hebridean islands are threatened with extinction because of a biodiversity experiment that introduced hedgehogs, according to a study recently published in the *Journal of Applied Ecology*.

Numbers of ground-nesting birds, such as dunlin, lapwing, redshank and snipe, have declined in recent years largely because their eggs are being eaten by the European hedgehog, *Erinaceus europaeus*.

On the island of South Uist the chances of wading birds successfully nesting have more than doubled in areas where hedgehogs have been excluded. The discovery has important implications for several other Scottish islands where hedgehogs have been introduced in the belief that they are strict insectivores whose effect on the fauna is benign.

They were introduced to the Western Isles in 1974 and have since colonised areas on Benbecula and North Uist, numbering some 5,000 in total. At the time the

project was considered a positive step for the wildlife of the Western Isles whose only other native mammalian predator is the otter.

But the Royal Society for the Protection of Birds says that since the hedgehog introduction the dunlin population has been cut by 65 per cent and the redshank's by 40 per cent. According to a 1984 study, such experiments have been the cause of about 42 per cent of bird extinctions.

Legislation in Britain prohibits the introduction of species from outside, but does not place the same restrictions on animals native to one part of the country being moved outside their natural range to another part of the country.

Clearly the results of this research contrast with the widely held perception that hedgehogs are harmless insectivores and has important implications for many other Scottish islands where they have been naturalised for much longer, and where they were thought to be a benign addition to the fauna.

£280,000 fund to save endangered species

Some of the world's most threatened species, including the golden-headed langur and the brown-headed monkey, are set to benefit from a British initiative.

Government funding totalling £280,000 over the next three years will go to the 'Flagship Species Fund', a joint initiative by the Department for Environment, Food and Rural Affairs and Fauna and Flora International. The fund will provide practical support to help those in front line conservation, working to save species at risk of being lost.

In its first year the Flagship Species Fund will focus on two species groups – primates and trees. Nearly half of all primate species are considered to be threatened, with 96 listed as being in danger of extinction.

The fund will support conservation work to help the red-shanked douc langur and the golden-headed langur in Vietnam, and the brown-headed monkey in Ecuador.

It will help develop practical solutions to the bushmeat trade in Cameroon and Nigeria. There will also be projects to help the endangered national Pau Brasil tree in Brazil and Mexico's most endangered oak trees.

New e-mail and web addresses

The IES has new e-mail and web site addresses:

◆ e-mail: ies-uk@breathemail.net

◆ web site: <http://www.ies-uk.org>

Last foot and mouth infected area lifted

The last remaining foot and mouth infected area in England has been lifted.

The landmark move followed extensive blood testing of sheep and clinical examination of cattle in the Brough and Kirkby Stephen area of Cumbria.

The successful completion of serological testing in the last remaining 3km Protection Zones saw the release of more than 17,000 farms from Infected Areas. However, animal movements are still subject to local authority licences.

The announcement affects almost 1,500 farms in Cumbria, North Yorkshire

and County Durham, and gives farmers greater flexibility on restocking and other day-to-day farming activities.

However, farms that were culled as infected premises or as dangerous contacts will remain under restrictions until they have completed the cleansing and disinfection process and restocked successfully – or until a period of 12 months has elapsed. These counties will not be eligible to become classified as FMD Free until at least 90 days after the last case there, which for Cumbria means the end of the year at the earliest.

Welcoming the news, DEFRA Minister Lord Whitty said: 'The lifting of the last remaining Infected Area in the country is a momentous achievement and reflects a great deal of hard work by teams on the ground.'

'We are not out of the woods yet. A number of counties in northern England have yet to be classified as FMD Free, pending further testing of sheep flocks in the surveillance zones. I would urge everyone to remember that strict biosecurity is as essential now as it has ever been.'

Acid rain halved

Damaged freshwater lakes and streams are showing signs of recovery due to a 50 per cent cut in acid rain following curbs on sulphur dioxide emissions. The main air pollutants remaining to be tackled are nitrogen oxides and ammonia.

These are two of the findings in a report from the National Expert Group on Transboundary Air Pollution (NEG-TAP). The Group has reviewed the impact of air pollution on sensitive habitats in the UK and the prospects for the future, focusing on acid rain, terrestrial eutrophication (over-enrichment from nitrogen) and ground-level ozone.

Action taken to tackle air pollution has had a major impact on acid rain over the last 12 years, NEG-TAP says.

The polluter pays

Exxon Mobil is to pay \$11.2 million for illegally polluting New York waters with benzene, the US government has announced.

The settlement, the largest ever of its kind, includes \$8.2 million in civil penalties and \$3 million for buying and restoring land on the Arthur Kill waterway between Staten Island and New Jersey.

Innovation and partnership key to £140m recycling fund

High achieving local authorities have put recycling at the heart of their waste strategies. Poor performers can increase their dismal recycling rates by following examples of best practice projects, contained in a consultation paper on the distribution of a new £140 million fund for waste minimisation and recycling.

The £140 million, provided over the next two years, is designed to help local authorities deliver their legal obligations to increase recycling. The paper suggests substantial extra funding for local authorities to work in partnership to deliver higher recycling rates; for those authorities that currently have low recycling rates to improve substantially; and also for top performing authorities to boost innovation.

The paper consults on how the fund should be distributed, the prioritisation and allocation for the £50m and £90m for the two years 2002-03 and 2003-04, and the kinds of projects for support.

This is part of a programme of action that is designed to produce a step-change

in the way we dispose of household rubbish. Under the approach set out in the Waste Strategy 2000 all local authorities have been encouraged to create Municipal Waste Management Strategies and have been set Best Value Performance Indicators to boost recycling. Further funding has been made available for Private Finance Initiative waste projects and through the National Lottery New Opportunities Fund for community recycling projects.

Commenting on the consultation paper, Margaret Beckett, the Secretary of State for Environment, Food and Rural Affairs, said: 'There is an urgent need for us to move to minimise waste and increase recycling. The Government is committed to making this happen. We have set waste authorities a challenge to double recycling rates by 2003-04 and we are backing that delivery with an additional £140 million of ring-fenced money. I look forward to being able to back worthwhile local authority schemes.'

DEFRA takes action to protect the rural environment

New safeguards are being introduced to protect uncultivated land and semi-natural areas from environmental damage as a result of being converted to intensive agriculture.

New regulations, to take effect from February 1, will require an environmental assessment for all projects to bring new land into intensive farming. Similar measures already apply to other types of

project under the town and country planning system.

Announcing the new procedures, Lord Whitty, the Food and Farming Minister, said: 'We have consulted widely on the introduction of environmental assessment procedures for certain projects on farms which could impact significantly on the environment.'

'Our intention is to minimise the bur-

den of regulation on farmers and landowners, while ensuring that land of significant environmental value has proper protection. We will make it very clear which measures require assessments, and I would encourage those proposing projects of this kind to discuss the issues with DEFRA's Rural Development Service, so that potential problems can be identified.'

Action plan for disposing of old fridges

The Government has announced a package of measures to help local authorities deal with the burden of scrapping old fridges safely. An extra £6 million will be available to help with storage until the end of March; and guidance has been published on the storage of waste fridges; draft standards for industry to deal with waste fridges; and information for consumers advising them how to dispose of old fridges safely.

From January 2002, discarded fridges will need to have the insulation foam removed before they can be recycled or scrapped, to prevent the release of CFCs into the environment. There are limited facilities available in the UK for treating the foam, but a number of companies have said they will invest in appropriate technology when standards are known.

The Government has been working closely with local authorities, electrical retailers and the metal recycling industry to ensure that the new Ozone Depleting Substances Regulation causes as little disruption to householders as possible.

The package of measures announced this month includes:

- an extra £6 million to help local authorities with the extra costs of storing fridges to the end of this financial year. DEFRA is urgently assessing the impacts of the Regulation and will determine what further action will be necessary beyond that;
- guidance on storage of waste refrigeration equipment, so that local authorities and others know how to store fridges safely;
- standards for the removal of chloro-

fluorocarbons (CFC) from the cooling system and the insulating foam, to enable industry to identify and invest in the new technology needed to deal with waste fridges; and

- a leaflet for consumers, advising them how to dispose of their old fridge safely. If the fridge is in working order, local charities can find new owners, or it can be refurbished and resold.

Michael Meacher, the Environment Minister, said: 'There is no need for householders to worry about disposing of their old fridge. If a retailer cannot be found who will take an old fridge away, local authorities will accept the fridge at the civic amenity site, free of charge. Local authorities will also collect from homes, but they can charge to cover the cost of collection.'

ENVIRONMENTAL INFORMATION

Policy commission on the future of farming and food

A response by the Institution of Environmental Sciences

The Institution welcomes the opportunity to respond to the consultation paper. The range of the issues involved is extremely wide, expanding to embrace the totality of rural planning policies and developments. In the time available, an in-depth and considered response on all subject areas is not practicable and we would therefore wish to direct attention to what we perceive as a number of critical areas. We trust, however, that opportunity will be afforded for further comment on any developing policy arising from the Commission's work.

In terms of overall farming and food supply policy, we believe that the UK should be self-sufficient in basic foodstuffs and 'buy British' should be an underlying theme. Free market competition has had a damaging effect on the farming industry and hence the rural economy and food standards have fallen. We also believe that 'small is beautiful' and the present move towards organic farming is to be encouraged. This helps the smaller enterprises and should improve quality. The manipulation of economic forces to achieve such ends may be difficult but a move that is necessary.

We do not rule out the use of GM tech-

nology to improve production levels but new systems should only be introduced after thorough trials and careful assessment of the benefits (and potential dangers). Traditional farming methods need more careful control to reduce over spraying of insecticides and other soil treatments to levels that allow a proper ecological balance. Effects on water tables (hence water supplies) and biodiversity must be stabilised. Achieving a proper balance needs a great deal of further investigation, research and trials.

The present dominance of the food chain supply by the larger retail organisations through supermarkets and hypermarkets has created a number of problems both for the consumer and the rural economy.

Mass produced foodstuffs now contain innumerable additives that are of no benefit to healthy eating and there is a preoccupation with price to the exclusion of quality. Genuinely fresh produce is becoming scarcer. Buying is centralised and the buying policies of the major corporations dictate both the growing policies of the farmers and the purchasing opportunities of the customer. Small retail food businesses in many rural areas

are being put out of business to the detriment of the local communities. A reversal of this trend is to be encouraged by whatever means available.

It is worth noting that this buying policy contributes to the alarmingly high incidence of livestock movement about the country – a major factor in the recent foot and mouth epidemic. The large volumes of traffic generated are also harmful to the environment in other ways creating more road traffic movements, congestion and air pollution. Smaller local abattoirs have had to close. Local sale, processing and distribution should be re-established (albeit a somewhat difficult process now) thereby helping rural economies.

Finally, there needs to be a comprehensive and co-ordinated countryside policy, probably led by DEFRA and the Environment Agency, which encourages public participation through national and local organisations – the stakeholders. Good environmental planning systems are required which address biodiversity, landscape ecology and amenity alongside the economic pressures of food production policy, farming methods and rural employment.

A new umbrella body for environmental institutions

Ten leading environmental organisations have agreed the formation of an Umbrella Body for the Environment.

Under the Chairmanship of Dr Michael Romeril and latterly William Pope of the Institution of Environmental Sciences, we have now agreed a Statement of Intent, which is reproduced below.

Membership of the new body will remain open to qualifying environmental organisations, the present membership of the group is therefore expected to increase and this will be encouraged. The current list of constituent bodies is as follows:

- Chartered Institution of Water and Environmental Management (CIWEM)
- Institution of Agricultural Engineers (IAgrE)
- Institute of Ecology and Environmental Management (IEEM)
- Institute of Environmental Management and Assessment (IEMA)
- Institution of Environmental Sciences (IES)
- Institute of Fisheries Management (IFM)
- Institute of Professional Soil Scientists (IPSS)
- Institute of Wastes Management (IWM)
- Institution of Water Officers (IWO)
- Royal Meteorological Society (RMS)

Statement of intent

We are exploring the concept of an Association of professional bodies recognised as an authoritative independent organisation representing members in all environmental disciplines. This we have designated temporarily as a 'Chartered Umbrella Body for the Environment' ('CUBE') whilst we search for an appropriate title.

Our aim is to reach a formal arrangement for CUBE which will go beyond a simple co-ordination of our affairs; our first task as the Founder Constituent Bodies of CUBE shall be to agree:

- vision statement
- terms of reference

■ a timetable
all based on the significant progress made by Founder Constituent Bodies to date.

We agree that:

- the identities and pre-eminence of our respective professional sectors must be preserved; CUBE shall embody mechanisms which bring us together under one umbrella, whilst at the same time allowing the identities of the constituent bodies to be maintained and their primacy and centres of specific excellence to be recognised and enhanced
- we shall continue to seek the inclusion in CUBE of other professional bodies which have a significant interest in the environment
- the final agreement shall be subject to the approval of our members, and we individually reserve the right to withdraw from this process.

We shall ensure that the outcome of this process will add value to the service and support of our members and not add unnecessary burdens on membership fees.

We share the goal of establishing the qualification of 'Chartered Environmentalist', or an equivalent designation, in addition to the existing opportunities for our members. Such a status would be

achieved by a process comparable with those of other organisations that award Chartered Status to individual members. The criteria for 'Chartered Environmentalist' will be based on:

- education
- training
- experience
- professional and ethical conduct.

This qualification will be awarded under the auspices of CUBE which will be the custodian of the Charter.

It is important that *all* members of constituent bodies are encouraged to participate in the affairs of their constituent bodies and hence, the new body itself, thus assisting in the delivery of the agreed Vision Statement, which will embody our aims and aspirations. We will continue to seek to exploit opportunities to arrange joint meetings and activities for the mutual benefit of our members.

We aim to progress discussions as quickly as possible and in accordance with the agreed timetable.

We shall seek to have this Statement of Intent endorsed by our respective Councils at the earliest opportunity and in any case not later than 31st December 2001; in the meantime the Founder Constituent Bodies intend to continue progress towards the formation of CUBE.

SUSTAINABILITY

Want to learn more about the most significant issue for the professions in the 21st century?

The Institution for Environmental Sciences in co-operation with the Earth Centre (near Doncaster) is running a series of participative, solutions-based workshops entitled

PROFESSIONAL PRACTICE AND SUSTAINABILITY.

These workshops will be based at the unique carbon-neutral conference centre at the Earth Centre. The events will be facilitated by practitioners and experts from the Environment Agency, NGOs, and the professions. All participants will receive a copy of the recently published training manual – **PROFESSIONAL PRACTICE FOR SUSTAINABLE DEVELOPMENT** – on which the workshop is based.

The first two workshops will be held 19-20 February 2002 and 12-13 March 2002. We would like to hear from all interested parties, whether companies, individual members or non-members of the IES.

For further information and costs contact

The Institution of Environmental Sciences
on 01778-394846 or email: ies-uk@breathemail.net

Umbrella body

Members will see from the information published in this edition that the umbrella body for the environmental institutions is now making significant progress.

A draft programme agreed at the last meeting of the guiding committee set early 2004 as the target for achievement of a new charter, though the umbrella body should be formally constituted and in operation before this.

The Institution is privileged to have provided chairmanship for the guiding committee throughout its deliberations so far, firstly through Dr Michael Romeril and more recently through Will Pope, our own Council chairman. Details of the constitution for the new body are being developed and should be presented to the councils of the participating institutions for ratification in the spring of 2002.

Regional activity in Scotland

The response to my enquiry in the last edition of the Journal has been slow. Our membership in Scotland continues to increase and I am sure that



The Hon. Secretary's news desk...

there are new members (and some older ones) who would be interested in developing professional activities in the region. For those who do, please write in with your ideas and preferences.

Professional Practice for Sustainable Development (PP4SD) – Phase 2

The project has now entered its second phase with an ambitious three-year programme. The realisation of this will depend upon the support of the project partners and fairly substantial injection of cash.

Initially we are pressing ahead with the organisation of courses based on the training

tools and experience developed in the first phase. Two courses for trainers are proposed in the early part of 2002 and details of these are advertised separately. Further information about the project is now available on our web site www.ies-uk.org

Accreditation of courses

The new programme recently agreed with CHES (Committee of Heads of Environmental Sciences) for the accreditation of first degrees in environmental sciences is now under way. The first applications for consideration have been received and it is hoped that many more will follow.

The professional accreditation of courses forms an important link between education and practice and is an

essential part of the maintenance of professional standards.

The previous programme operated by the Institution, though valuable, was hampered in its development by shortage of resources. It is hoped that this new programme, with more streamlined procedures and assistance from the CHES panel, will provide more substantial results.

New Council and Committee members

As you will have gathered from reading the Journal news in this column over the past months, the Institution is deeply involved in a number of key initiatives of national significance and an ambitious programme of other activities requires considerable human resources – in our case ‘voluntary support’.

There are plenty of opportunities to contribute, the best route being via membership of one of our working Committees or of Council itself (there are vacancies available!) Expressions of interest will be welcomed.

RAF

Forthcoming conferences and courses

29 January 2002

QMW Public Policy Seminars: historic environment

A key to Sustainable Regeneration – Implementing Government’s Historic Environment Policy Statement. This one-day seminar with the Minister and leading players marks publication of a Government policy statement and discusses its practical impact. Details: Louise Rushworth 01422 845584 Email: louise@qmwseminars.co.uk

4-7 February 2002

Management Planning Workshop (Advanced)

Plas Tan y Bwlch, Wales £290

Short course to update and consolidate knowledge concerning site management plans.

Details: The Director, Plas Tan y Bwlch, Maentwrog, Blaenau Ffestiniog, Gwynedd, LL41 3YU 01766 590324 Email: plas@eryri-npa.gov.uk

18-20 February 2002

The Countryside and Rights of Way Act

Plas Tan y Bwlch, Wales £185 Short course which aims to provide an insight into this Act and the new duties arising from it. Details: The Director, Plas Tan y Bwlch, Maentwrog, Blaenau

Ffestiniog, Gwynedd, LL41 3YU 01766 590324 Email: plas@eryri-npa.gov.uk

4-8 March 2002

Planning and Managing Conservation and Amenity Sites for People

Plas Tan y Bwlch, Wales £310 Short course which aims to explore ways of optimising sustainable public use of conservation and amenity sites. Details: The Director, Plas Tan y Bwlch, Maentwrog, Blaenau Ffestiniog, Gwynedd, LL41 3YU 01766 590324 Email: plas@eryri-npa.gov.uk

New members

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

Mr J. M. Ballantyne Environment Protection Officer
SEPA

Mr P. Broadbent Research & Development Surveyor
Bradford & Northern Housing Assoc

Mr D. Cribb Recent Graduate
University of Lincolnshire &
Humberside

Mr P. J. Duffy Quality Manager
SEPA

Mr R. Gibbs Britannia Airways Ltd
Health, Safety & Env. Co-ordinator

Mr D. N. Johnston Chemist
SEPA

Miss C. S. Keen Recent Graduate
University of Greenwich

Mr J. C. M. Lamb Environment Protection Officer
East Lothian Council

Miss S. McKenzie Waste Data Officer
SEPA

Mr G. Smith Environment Protection Officer
SEPA

Mrs N. Stockdale Recent Graduate
University of Lincolnshire &
Humberside

Mr E. Toms Senior Environmental Engineer
GESL

are you doing your bit?

Moving? Changing jobs?

Remember to let us know promptly with your new address, telephone number, etc. This can avoid loss of communication, wasted postage and unnecessary complications.

Write to:

IES, PO Box 16, Bourne, PE10 9FB

Tel/Fax: 01778 394846

E-mail: ies-uk@breathemail.net

Your reputation could be dead in the water

Organisations invest heavily in developing their reputation - but a single environmental incident can destroy it in minutes. Good management of environmental responsibilities reduces the risk, helps safeguard corporate integrity and often makes a tangible contribution to cost management.

BASEC, a UKAS accredited body, can help with certification to ISO 14001 and EMAS. During the assessment process BASEC will assess the client's identification and resolution of problems and risks associated with disposal of hazardous material, and the liabilities arising from spills and contamination of land and groundwater. In addition BASEC puts great emphasis on the evaluation of methods to minimise energy, water and material usage, in order to reduce operational costs.

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Milton Keynes MK8 0ES

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Diary dates for 2002

21 January	GP Committee	13.00
6 March	Education Committee	10.30
6 March	AGM & Council	13.30

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Occasional papers available now from IES

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 UK government
- Local Agenda 21 – making it work

**Price: £5 per paper including p&p
(£3 per paper for members)**

Contributors

The *Environmental Scientist* aims to provide a forum for members' contributions, views, interests, activities and news, as well as topical feature articles. Articles up to 3,000 words should be submitted to the Editor, *Environmental Scientist*, PO Box 16, Bourne, PE10 9FB, three weeks prior to publication in the last week of January, March, May, July, September and November.

Views expressed in the journal are those of the authors and do not necessarily reflect IES views or policy.

Advertising

Advertisements 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.

