SUSTAINING SCOTLAND'S ENVIRONMENT: AN OVERVIEW OF THE CONFERENCE AND THE FORWARD AGENDA

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Following on from the summary of the Conference by Tricia Henton, Chief Executive of SEPA, I provide below an overview of the major issues which were raised during the Conference proceedings, I give my own interpretation of the challenges which are faced and suggest directions for the future.

The Conference focused particularly on the state of Scotland's environment and natural heritage addressing trends in relation to air, land and water, as well as specific issues, such as biodiversity and the marine environment. The opening papers by Raymond Young, John Markland and Kevin Dunion and the closing paper by Tim O'Riordan also raised wider issues relating to the sustainable development agenda in Scotland from a number of significant perspectives: integration of policy, vision and strategic direction, measures of progress and new structures for governance. These two aspects of the Conference are very closely related as the policy and governance group of issues cannot be taken forward unless there is high quality data of trends in key environmental parameters, and there is objective assessment using the most up-to-date scientific knowledge and methodologies. The interaction between scientific evidence and policy change has never been more important. It is essential that the development of policy and governance structures are informed by the outcomes of scientific investigation. I shall return to this point in the concluding section of this paper.

This overview considers the issues emerging at the Conference under the following headings:

Data
Knowledge
Interpretation

Policy

Mechanisms

and concludes with a section on the way forward.

Data

A great deal of data on the state of Scotland's environment and its natural heritage has been accumulated over a long period of time. As a result it is possible to detect trends in key parameters relating to air, land and water, and relating to species and habitats. The papers in this volume note that trends are very variable with some in an upwards and positive direction, some stable, and some in a negative and downwards direction. The papers analyse the trends themselves and consider, with the data available, the amount of understanding we have about the causes of these trends.

A number of key points should be made about data. First, it is essential that we maintain long runs of data so that trends, which are not overwhelmed by short-term peculiarities not of significance in the long term, can be detected. Short runs of data, whilst of some assistance, are not as valuable as longer term trend data. Second, there is a need to ensure that gaps in data about the environment and natural heritage are identified and efforts made to overcome these deficiencies. A number of data gaps are obvious: landscape change, species at the genetic and unicellular levels, along with data about public attitudes towards the environment, the economic costs and benefits of environmental management, and the broader economic benefits of the environment to society. Plugging these gaps is essential if we are to have a better overview of all of the elements of the sustainable development trilogy. Third, we are very data rich in some topics, such as vertebrates and invertebrates. The question has to be raised whether we need all of this material or whether we can collapse the data into meta-data sets to give a broader prospective of changes, for instance, in particular habitats. I would question whether we require all of the bird monitoring data that we currently have and suggest that this is rigorously reviewed. At a time when there are

demands for more data sets and the resources for data collection and analysis are not increasing, then rigorous scrutiny of the validity of continuing collection of data is vitality important.

It is only relatively recently that organisations like SNH have become aware of all of the data available. Efforts to ensure that this is effectively catalogued and its quality assessed has had to be undertaken. Too often in the past data was regarded as the private property of those individuals in public bodies who were responsible for its commissioning or its collection. This can no longer be the case given the vital importance of the use of data to inform the broader policy process. In addition, we can no longer make excuses about the difficulty of data release, partly because of the statutory demands through Freedom of Access to Environmental Information Regulations and also the availability of web-based systems. So the major challenge for all who are custodians of data is to ensure that its quality is properly assessed and it is made accessible to all potential users particularly through CD Rom and web-based systems. It is recognised that there are risks in releasing data about the environment and natural heritage. Some of the material is sensitive because of the locations of scarce species and some of it is sensitive because it could lead to litigation by individuals who feel that they might be treated unfairly. These risks need to be assessed but, in the majority of circumstances the decision has to be to release data and make it accessible to all.

Knowledge

The amount of investigation and accumulation of knowledge about the environment and natural heritage of Scotland is at an all time high. We know a lot about basic environmental concepts such as ecosystem functions as the context for the interaction between species and their habitats and the flows of energy and other substances. We are beginning to understand better the importance of “environmental services”, ie the role which water, air and soil play in providing services to civil society in terms of productive media for food and fibre, in terms of productive media for a wide range of species, and in

terms of the supply of the essential nutrient of life: water. The complex concept of “carrying capacity” is regarded by many as one of the most critical measures of the limits of the environment to provide services to civil society and to natural systems. Despite all of the research which has been under on these basic concepts, much more needs to be done to ensure that they are quantified in a way which means they can be brought into the equation alongside issues relating to society and business. Explaining how ecosystems function and how the ecosystem approach through the Convention on Biological Diversity can be implemented in practice are vital tasks for the scientific community. Improving ways of measuring the contribution of the environment and also the limits to its capacity in providing services for society is equally vital. Alongside this scientific effort, there needs to be a much stronger effort to demystify the concepts so that they are readily understood by civil society, and in particular, key decision-makers - politicians themselves and those who advise them. Without this demystification, then these powerful and vital concepts will be ignored.

For instance, there is the ecosystem services of soil formation for society’s benefit of long-term natural capital for food and fibre; and the ecosystem services which of erosion control, allowing soil to be retained within the natural system, enables society to benefit from reduced flood risk to farmland and settlements.

New concepts and new approaches are being developed all of the time and it is essential that these are taken forward in a Scottish context. An ecological and environmental footprint analysis of the activities of civil society in its various parts is one which has not been addressed to any extent. Considering the environmental footprint of urban society on rural areas and rural society on urban areas is but one angle on this issue. Considering Scotland’s ecological and wider environmental footprint on the rest of the UK, on Europe and more especially on the developing world is something which needs urgent consideration. It is unlikely that decision-makers and the wider population really think about these matters either when they are purchasing out of season fruit and vegetables in the supermarkets which have been

produced in developing countries such as Kenya, or when taking a foreign holiday in developing countries in Africa or Latin America or South East Asia for example. The concepts of environmental justice need to be considered much more fully. This is an important element of the sustainable development equation because it means not was this being done by civil society to nature itself but it also means the equitable sharing of environmental resources (a key plank in the Convention of Biological Diversity) on civil societies. Residents in industrialised areas readily understand the problems of environmental injustice in the management, for example, of major river systems like the Nile or Ganges which cross international boundaries. However, they fail to recognise the environmental injustice of the management of similar river systems in countries like Scotland. On the Tay, for instance, the UK's largest river in terms of its level of discharge, the residents of Perth consider that environmental justice is achieved if flood barriers are erected through the City along the banks of the river real environmental injustice would be achieved if the flood banks upstream where removed and the methods of cultivation and exposure of soils and increases in drainage were moderated upstream; hence farmers were asked to play a role as flood plain managers. Equally, environmental justice means not just putting the unpalatable developments next to deprived communities rather than next to upper and middle class communities. More particularly, it means giving all members of our society in Scotland an equal chance of access to environmental resources and the enjoyment of our natural heritage.

The challenge therefore is to develop these concepts of ecological footprint and environmental justice much more in a Scottish context, recognising our dependency on the wider world, and then applying them to the decision-making process. That way we should much more easily be able to define linkages between the environmental resources of the country and social well-being and economic development.

Interpretation

Interpretation of material on trends in the environment and natural heritage, within the context of existing and new scientific and allied concepts, is another vital part of the process of advising on the policy and practice of sustainable development from an environmental prospective. The "state/pressure/trend" model is now a well-accepted one and has formed the basis for environmental audit work by both SEPA and SNH. In recent years the organisations have covered the majority of their remits with SEPA publishing seminal statements on air, water and soil and SNH on trends in the natural heritage. The amount of new knowledge and its more effective interpretation and presentation has increased our understanding very significantly. It is interesting, for example, to contrast SNH's 1994 report on "The Natural Heritage of Scotland: An Overview" with the recently published report on "Natural Heritage Trends 2001".

The challenge, as always for public bodies, including SEPA, SNH and research institutes is to maintain the highest level of objectivity possible. That way it will ensure that debate about policy formulation and review will be properly informed. It will also help to correct some of the misunderstandings which are deliberately put into the public domain by particular interest groups who look at things from a very narrow prospective and ignore much of the relevant information and its interpretation. Take, for example, the position with seals. There is substantive evidence that seals do prey upon Atlantic salmon but some commentators maintain that this is so significant that it fully justifies a cull of these populations. This fails to take into account both the protected status of both of the species of seals under the European Union Habitats Directive and the scientific appraisal of the many factors which have an impact on the salmon population: changes in water circulation patterns, saliently and temperature in the North Atlantic, intercepting fisheries offshore and near the coast, hybridisation with releases from salmon fish farms, river engineering works which have an impact on the spawning beds being amongst the major factors. In addition, it is often a concern of those involved in the research community that there is insufficiency of data or its quality is not

of the highest. Whilst these are valid concerns, we can never reach perfection in data availability and data quality. It is very important that the research community can indicate the levels of confidence which can be given to information which has been used in analyses.

It is a truism that the environment does not recognise political boundaries. How Scotland compares in terms of its environmental quality as well as its living standards and economic prosperity, with other countries, in Europe is therefore important. Without these comparisons it is impossible to understand how Scotland is fairing compared with elsewhere. Hence any indicators of the environment, and of economic and social well-being, need to be framed in a context which allows them to be compared with changes elsewhere. Therefore the validity of separate sets of indicators for Scotland on the various components of sustainable development, for example, is a flawed approach. The set of 147 UK indicators for sustainable development set out in the DETR paper “A better quality of life” should form the basis. The approach taken by the National Assembly of Wales in examining that larger data set, utilising those indicators which are relevant for Wales seen in the UK and wider context, and modifying slightly others to ensure that they are relevant to a Welsh context is preferred by many commentators in Scotland to the proposals in the Scottish Executive paper “Checking for Change”. A thorough review of the UK set of indicators to consider their relevance for Scotland and to ensure that Scotland can be properly contexted within a European level is vitality important.

In addition, there is a challenge of developing composite indicators for the environment. In another paper, Michael Usher argues the case for using composite trends for bird species associated with particular habitats as one way forward. I support this approach. If this could be developed for other sets of species and other environmental factors so much the better. In addition, there is a challenge to the environmental community to seek to develop composite indicators on similar lines to those which have been developed by economists for the economy for instance various measures of unemployment and various measures of gross domestic product. Whilst this

is not easy, it will be a far preferable approach to that suggested in “Checking for Change”, of taking carbon dioxide as the one single measure as this only reflects part of the environment.

Moving Policy Forward

We are in a period of very fertile policy development, particularly since the establishment of the Scottish Parliament and the Scottish Executive. We now have new policies for a variety of areas including agriculture, enterprise, tourism, social justice, culture, and wildlife conservation. These are all laudable. But if they are inspected in detail to see how they match with the expectations emanating from Rio and even from the Scottish Executive’s own social and environmental sustainability ambitions, then many find them wanting. In addition, these policies seem to have been drawn up in isolation one from another, whereas the practice of sustainable development demands a much more integrated approach: in the words of the UK Government “joined up Government”.

There seems to many to still be a “silo” mentality in relation to particular sectors such as agriculture, and in relation to other areas of Government business such as enterprise. If we are to achieve the integrated approach demanded by sustainable development then these barriers need to be broken down once and for all. This does not mean abandoning policies for supporting particular sectors but it does mean ensuring that support for one sector does not have untoward effects on other aspects within the sustainability equation. Therefore any new policy must be put to the test as to its environmental, social and economic costs and benefits before it is finalised. In a sense, this is the equivalent of the “treble bottom line” approach within the business community by checking out the environmental sustainability and social well-being components alongside business viability. Government should be no different in this respect to the business community.

Perhaps more fundamentally, many speakers at the Conference talked of the need for a clear vision for Scotland: A vision for a sustainable Scotland. At

present there is no such over-arching vision, other than that stated in the partnership for Government document of the Scottish Executive. Whilst this has positive elements, it needs to be teased out much further. As a starter for debate on this issue set out below is a possible vision for the future

Sustaining Scotland means

- Human society and its natural environment are accepted to be inter-dependent;
- People are an intrinsic part of the environment;
- The environment is recognised as a capital asset for society; and
- The environment can be used for human benefit provided that this is within carry capacity, that undue risks are not taken and that the functioning of natural systems are no significantly impaired.

To achieve a vision there needs to be a meaningful visioning process. Bodies like SNH have sought to develop visions but, in hindsight, perhaps have consulted after they have firmed up their own views as opposed to using a much more collaborative and interactive process with other key constituencies. The advent of the Institute of Contemporary Scotland and the Scottish Civic Forum provide ample opportunities nationally to stimulate such a debate, and at the local level the community planning process provides an important vehicle provided that it is fully embraces the Agenda 21 process.

Part of the problem in the past, in Scotland and many other industrialised countries, is the issue of organisational cultures. Inevitably within the public service risk aversion and caution rather than pro-activity tend to be the order of day. Seeking to move forward organisational cultures is a major issue: this cannot be resolved quickly but requires leadership within those organisations at all levels if it is to occur.

Looking at the situation in Scotland over the last 12 years with respect to the evolution of thinking, policy and action on sustainable development gives a rather mixed picture. There have been a number of high points but also a

number of low points throughout the period. Obvious high points were the fact that a Secretary of State was prepared to give a major speech on sustainable development in September 1989 to a predominantly business audience and this was followed up the following year by the agreement by governments and supported by all parties in the House of Commons and House of Lords for the first sustainability duty on a public agency: SNH in the Natural Heritage (Scotland) Act 1990. Other high points were the publications of policy statements by SNH on its approach to sustainable development in 1994, the legislative provision for SEPA for a sustainability duty, and the publication of the report of the Advisory Committee on Sustainable Development in Scotland in 1998 and the prominence given to sustainable developments by the new administration elected in 1997 and the "Partnership for Government" documents in 1999 and last, but by no means least, the decision by the Minister for Environment and Planning in 2000 to refuse permission for the Lingerabay superquarry application on sustainability grounds.

However, there have been equally some low points including the fact that SNH was rebuked by Government for wishing to take into account sustainability considerations in its advise on the proposed second Forth Crossing, that SEPA was given guidelines on sustainable development rather than being allowed to develop them itself, that the so called sustainable development strategy for Scotland relates only to Waste, Energy and Transport and fails to take into account economic and social issues and policies. Indeed, it fails to recognise the relevance of one of the cornerstones of the Rio protocol the Convention on Biological Diversity, despite the immense commitment at national and local level in Scotland for biodiversity conservation, and the fact that the proposed indicators for sustainable development remain wedded entirely to the narrower WET strategy. And the total failure to address the issues and practical steps set out so cogently in the Report of the Secretary of State's Advisory Committee on Sustainable Development published in 1999.

Optimists, like myself, in 1990 felt that by the end of decade we would have achieved a great deal in relation to sustainable development policy and practice but this has proved not to be the case and rather there has been a series of setbacks and the case for a vision for sustainable development in Scotland, the adjustment of the relevant policies and the need for new mechanisms to ensure its implementation is still having to be made amongst others by former members of the Advisory Committee on Sustainable Development in Scotland, and members of the UK Sustainable Development Commission, including those resident in Scotland.

Mechanisms for delivering new policies for Sustainable Development

At present, the policy mechanisms available have not evolved sufficiently to allow the integrated approach demanded by sustainable development to be delivered effectively. Although there are many schemes which are positive and provide a challenge, there is still a great deal of subsidy and compensation within Government financial mechanisms. As has been argued in the case of nature conservation, these must now be regarded as outmoded. It is encouraging that new approaches that rely upon positive financial stimuli are being put into place. Contracts on behalf of society between Government and its Agencies and those delivering goods and services are an obvious way forward. As has been argued in the "Strategy for Scottish Agriculture" the idea of Land Management Contracts is much more likely to deliver a range of goods and services provided by farmers and farmland to civil society than the current regimes which are based predominantly on price and production support. Whilst this will require fundamental reform of the European Union's Common Agriculture Policy and therefore agreement by Member States, there are opportunities within the subsidiarity arrangements already agreed by the EC for much greater progress to be made in Scotland. Continuing the agricultural example, it is clear from talking to many farmers that they would be prepared to play a wider role than food production, that they would be prepared to be stewards of biodiversity, of soil and water resources, of the cultural and landscape heritage of the countryside, of access to the countryside and where appropriate of managing flood plains and creating

greater carbon stores. Multi-facet land management contracts with farmers to cover these issues will be the way forward. However, the present sub-division of the agriculture budget in Scotland is not amenable to this. Of the total of around £550 million only one twentieth is devoted to direct environmental payments: does this mean that the environment represents only one twentieth of farmland? Many hope that this is not the case and would welcome a much greater and much faster increase in the programme of support for agriculture to deliver these wider ranges of environmental benefits mentioned earlier.

Basically the challenge is to move from a culture of compensation to a culture of paying for outcomes. More generally, economists have always argued that the taxation system is by far the most effective instrument for delivering outcomes of benefit to civic society and it is hoped that governments will explore these issues and implement changes: certainly the approaches to landfill have been very effective.

The Way Forward

There is no-one single recipe for taking matters forward.

Leadership is required nationally and locally by politicians, by public servants, and by public bodies to ensure that we achieve the culture change necessary within organisations to achieve the integrated approach to deliver sustainable development. Inclusion of all parts of civil society is equally essential and ensuring that methods of participation are inclusive. A vision for the future, developed through proper participative measures, is required both at the national level and in the various component parts of Scotland. Allied to this, policy needs to be better integrated and needs to be tested against the environmental sustainability, social well-being and economic prosperity criteria of sustainable development. New instruments which seek to deliver positive outcomes for society and the environment are required, including potentially reform of the taxation system and other incentives. We also need more objectivity in getting over the messages arising from the measurement, monitoring and assessment of trends in the environment and the natural

heritage so that the debate about vision, policy and its implementation are better informed than it is at present.

Finally, it is essential that scientists and others in the research community play their part in demystifying the concept and practice of sustainable development and the various aspects of the environment and natural heritage which are part of it. The Conference on which these proceedings was based had a predominantly environmental audience. Whilst this is very valuable for the participants, in future conferences it is my hope that we will have a much more diverse audience so that those in the environmental business in both public and voluntarily sectors reach out into a wider world. That way the validity of the environmental component of sustainable development will become increasingly recognised and the debate about a sustainable Scotland much better informed.