

# Snapshots of the Environment

ENVIRONMENT  
AGENCY

The National Centre for Environmental Data and Surveillance

## A new environmental approach

### 1.0 Introduction

1.1 The Environment Agency has a wide range of duties and powers relating to environmental management. Its fundamental objective is to help achieve sustainable development. The basis of the Agency's environmental strategy is to take an integrated approach to the management of the whole environment.

1.2 The Snapshots of the Environment are a series of documents that explore the various parts of this strategy. This first issue aims to give an overview of the framework behind the Agency's strategy. It discusses the formation of the **Viewpoints, Stresses and Strains and Risks and Appraisals** frameworks and their integration into the Environment Agency's strategy and nine key **Environmental Themes**.

### 2.0 Background

2.1 The principal aim of the Environment Agency as set out in the Environment Act 1995 is "to protect or enhance the environment, taken as a whole, in order to play its part in attaining the objective of sustainable development". As part of this responsibility the Agency has a specific duty to compile environmental information, either by carrying out its own duties or by working with other organisations.

2.2 In 1996 the Agency published **The Environment of England and Wales 'A Snapshot'**. This report compiled some of the available information on environmental pressures and states. It demonstrated very clearly that although vast amounts of data existed there were many gaps and inconsistencies. As a result the Agency has identified the need for a consistent and holistic approach to monitoring and assessment programmes. This will support the increasing demands to provide information, derive sustainable solutions and chart progress towards achieving the goal of sustainable development.

### 3.0 Viewpoints

3.1 In 1997 the Agency published a consultative document entitled **Viewpoints on the Environment**. Its purpose was to stimulate discussion and seek feedback on the need for a national framework for measuring the state of the environment. The framework was to serve the needs of the Agency and also those of its different stakeholders. It was also intended to improve cohesion amongst the activities of different

organisations with environmental responsibilities.

3.2 The document sets out a proposal for the design of a framework consisting of six different, but complementary 'Viewpoints'. There was general agreement from the consulted bodies that the Viewpoints approach presented a sensible and practical basis for a national environmental assessment framework.

3.3 The six Viewpoints are:

**3.3.1 Land use and environmental resources**, which looks at the quantity of environmental resources available, including land use and water resources, together with changes to these over time and the depletion of non-renewable resources.

**3.3.2 Key biological populations, communities and biodiversity**, which looks at the variety of life that exists and considers the number and extent of key indicator species.

**3.3.3 Compliance with environmental standards and targets**, which looks at compliance with standards set by EC Directives, national legislation, international agreements and classification schemes.

**3.3.4 The "health" of environmental resources**, which concentrates on specific issues of concern in relation to the health of environmental resources. This includes issues such as eutrophication, acidification, hormone disruption and environmental toxicology, and interfaces with human health.

**3.3.5 Environmental changes at long term reference sites**, which looks at the available data sets and considers integrated information on long-term trends at specific sites.

**3.3.6 Aesthetic quality of the environment**, which considers issues such as landscape, light pollution, litter and odour. These are often new and subjective ways of looking at the environment but relate to the issues deemed most important by the public.

### 4.0 Stresses and Strains

4.1 As the Viewpoints framework expressed the state of the environment, a Stresses and Strains framework has been developed by the Agency to relate the effect of the many sorts of pressures on the

environment to each of the six Viewpoints.

**4.2** The pressures on the environment can be thought of as different sets of **stresses** which affect the state of the environment causing different **strains** upon it. The pressures themselves arise from what are referred to as different drivers; these are essentially sociological and societal. They include the need for improved standards of living, wealth creation and improved quality of life. The Agency needs to understand these pressures and measure them in order to assess how successful it has been at reducing or alleviating the strains upon the environment.

**4.3** This framework allows the Agency to assess and analyse the extent and magnitude of the pressures and their impact on the environment. By focusing the collation of data sets in a structured way, pressures can be prioritised and managed more effectively.

**4.4** There are six stresses in the framework; these reflect the Agency's responsibilities and activities together with the underlying natural and societal drivers.

**4.5** The six Stresses and Strains are:

**4.5.1 *Natural forces***, including weather and climatic variations such as the extent and rate of temperature change, storminess and rainfall patterns.

**4.5.2 *Societal influences***, which are perhaps the most pervading and wide ranging of all the pressures on the environment, from the size and distribution of population to transport and recreation.

**4.5.3 *Abstractions and removals***, including the removal of water, minerals and materials such as peat. Other factors such as fishing intensity and the cropping of trees are also included.

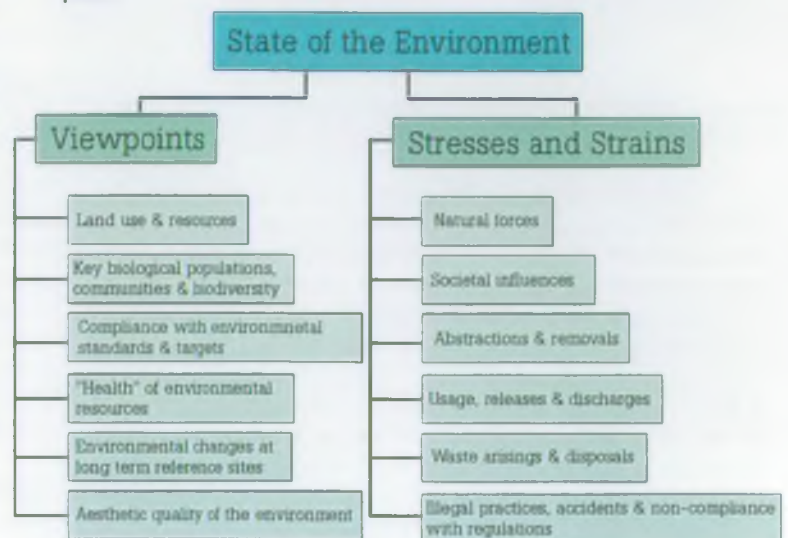
**4.5.4 *Usage, releases and discharges***, covering emissions from fixed and mobile sources and cumulative input from diffuse sources such as fertilisers and pesticides.

**4.5.5 *Waste arisings and disposals***, including the by-products of industry and society in general. The handling and disposal of this waste using methods such as landfill or incineration.

**4.5.6 *Illegal practices, accidents and non-compliance with regulations***, covering pollution incidents affecting air, land and water. Other issues such as fly tipping and the extent of organised environmental crime are also included.

**4.6** The Viewpoints and Stresses and Strains frameworks will be integrated into a matrix. This will

enable the Agency to assess how each stress affects each viewpoint and to measure and monitor these effects. This matrix approach will also help the Agency assess future priority action points for its corporate plan.



## 5.0 Risks and Values

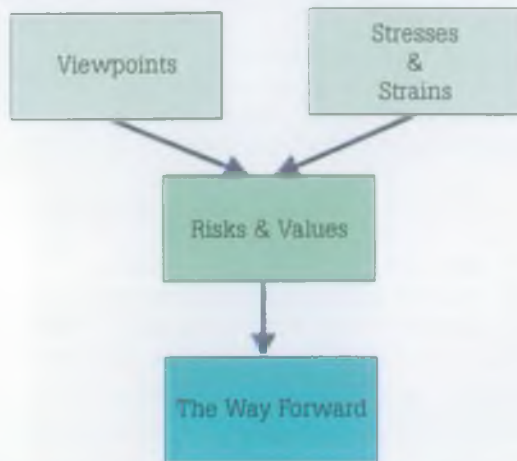
**5.1** The third part of the environmental strategy is the Risks and Values framework. This framework is essentially one of a common approach to help balance the different Stresses and Strains and put them into perspective. It will assess the risks to the environment, forecast the likely future of current trends and determine the value of the environment in question. It is therefore not so much a framework for data, as one for methods and techniques which can be applied to the Viewpoints and Stresses and Strains data sets.

**5.2** The ability to forecast the likely state of the environment under different circumstances will enable the Agency to make more informed and proactive decisions on a national, regional and area level.

**5.3 *Risks*** - The Agency has to deal with many types of risk. Some risks are inherent such as flooding, drought and contaminated land. New risks include issuing of consents for new processes. Future risks may include the disposal and storage of radioactive waste. There are also differences in the public perception of risks such as BSE, the reprocessing of nuclear waste, and the disposal of decommissioned oil rigs. In each case the Agency needs to understand the relative significance of all risks in order to prioritise them.

**5.4 *Values*** - Values are the measures of the importance attached to things. They can be derived from a number of factors: basic needs; the desire to possess; emotional attachments; a technical understanding of an issue or purely societal issues. To understand this the Agency is now compiling

specific data sets. They consist of case histories of environmental decisions which have involved the transition of values into monetary terms. These decisions have affected management actions such as the cost of moving a sensitive species from one place to another in order to construct a road.



functional way. It needs to deliver an integrated response. Thus the fourth framework, Delivering a Better Environment, consists of a thematic approach which will result in an improvement in the state of the environment from all points of view and a reduction in the collective stresses and strains. The themes are spelled out in a document entitled **An Environmental Strategy for the Millennium and Beyond**. Within the nine key themes the Agency has identified those aspects which are directly within its control. Issues on which it can secure improvements by working in collaboration with other organisations and issues where it can only achieve an outcome by persuading others to follow a particular course of action. The Agency has set itself a list of specific actions to progress the nine themes and by which its performance can be measured in moving toward its goal of sustainable development. The nine themes cut across all aspects of the Viewpoints and Stresses and Strains frameworks and represent the Agency's new holistic approach to environmental management. The nine key themes are briefly summarised as follows:

## 6.0 The Way Forward

**6.1** The integration of all three frameworks aims to provide the Agency with information that will allow it to identify problems and produce consistent responses to maximise its contribution to sustainable development.

**6.2** The basic frameworks of Viewpoints, Stresses and Strains are being utilised in another powerful technique which is being used by the Agency - the Local Environment Agency Plans. The LEAP approach should enable the Agency to evaluate data on the state of the local environment, the strains arising from the pressures placed upon it - be they local, national, or global. They can be analysed in a consistent way using the Risk and Values framework, in order to help the planning and decision making process. The Agency will consider the options available, commission Research and Development where required, disseminate information and continue to use techniques such as consultation and consensus building.

**6.3** In adopting this new approach, guidance, tools, techniques, information and publications are produced which provide the context within which the organisation as a whole is able to formulate policies and LEAPs, all of which contribute to sustainable development.

## 7.0 A Thematic Approach

**7.1** All of this raises the question; what is the Agency actually going to do? It is clear from the development of this strategic approach that the Agency cannot work in isolation, nor approach environmental problems in a piecemeal and strictly



**7.2 Conserving the land** by addressing such diverse issues as contaminated land, town and country planning and by determining the state and extent of soil erosion and developing a strategy to alleviate it.



**7.3 Enhancing biodiversity** by implementing the EC Habitats Directive, through delivery of the UK's Biodiversity Action Plan, and by undertaking specific projects to restore habitats and thereby increase biodiversity.



**7.4 Managing our water resources** by encouraging more efficient use of water by its major users. By promoting water saving measures over the exploitation of environmental resources and by ensuring environmental needs are taken into account in the next round of Asset Management Plan talks.



**7.5 Delivering integrated river basin management** by managing river basins in an integrated way through LEAPs. By delivering a continual improvement in overall water quality and habitats, and by providing effective flood defences and warning systems.



**7.6 Addressing climate change** by ensuring the Government's greenhouse gas emission targets are met. Through the use of predictive modelling and through contributions within international fora. By reducing the Agency's own environmental impact.



**7.7 Improving air quality** by assisting in the delivery of the UK Air Quality Strategy. By ensuring the reduction of emissions to air, and by discouraging the use of solvents which contribute to the major photochemical pollutants.



**7.8 Managing our freshwater fisheries** by securing a robust funding base for fisheries management. By reducing poaching and rod license evasion and by developing specific long term strategies for salmon, trout and coarse fisheries.



**7.9 Managing waste** by providing a high quality waste regulation service. By combatting illegal practices and by ensuring that proposals for radioactive waste disposal provide the necessary level of protection for mankind and the environment.



**7.10 Regulating major industries** by continuing the delivery of Integrated Pollution Control. By maintaining and expanding the Chemical Releases Inventory, implementing EC Directives and taking part in European Union initiatives. By developing pollution prevention control tools including projects relating regulation to emission, efficiency and economic benefits.

## 8.0 State of the Environment (SoE) Report

**8.1** Unless the public are persuaded to appreciate the need for firm and immediate action, most environmental initiatives will be impossible to implement. In line with this thinking, it is a long term aim of the Agency to secure a shift in the general public's attitudes to the environment. One of the key means of ensuring and maintaining public awareness and involvement is by ensuring their access to relevant, timely, environmental information.

**8.2** The summary guidance by Government to the Agency on its contribution to sustainable development is that high quality information and advice should be used and provided to others. The present Government is actively promoting the philosophy of access to information and has placed environmental issues within its top three priorities. This may well increase the requests for information by Government departments, the media, the public and other interested parties.

**8.3** The Environment Agency has already published the information contained within **The Environment of England and Wales 'A Snapshot'**

on its Internet web site at <http://www.environment-agency.gov.uk>. The SoE section is a dynamic site that is frequently updated to present the latest available environmental information; not only Agency information but from a wide range of Government departments, research bodies, industry and environmental organisations.

**8.4** The site has proved very popular with members of the public and is becoming an essential method of communication with the media and educational and academic communities.

**8.5** The SoE report on the Internet is currently being redesigned to bring the site into line with the Agency's Viewpoints and Stresses and Strains frameworks. The aim is to provide a growing body of information in relation to changes in the state of the environment as seen from the different viewpoints.

## 9.0 Snapshots on the Environment

**9.1** The Snapshots on the Environment series explores some of the issues related to each of the nine key themes. Each Snapshot will provide some background information, discuss some current trends and address some of the stresses imposed on the environment. The next Snapshot in this series will look at Conserving the Land.

**9.2** Given the wide range of potential topics and the restricted space, these Snapshots can only touch upon some of the issues and cannot be a comprehensive review. As more information becomes available, or new issues develop, they will be covered in future Snapshots. An important aspect of the Snapshots is that they will develop the issues that can be followed across the nine themes covered in the series.

## Bibliography

*The Environment of England and Wales 'A Snapshot'*. 1996. Environment Agency.  
*Viewpoints on the Environment*. 1997. Environment Agency.  
*An Environmental Strategy for the Millennium and Beyond*. 1997. Environment Agency.

## Acronyms

BSE - Bovine Spongiform Encephalopathy  
LEAPs - Local Environment Action Plan  
SoE - State of the Environment  
the Agency - The Environment Agency

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