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State of the environment reporting: Institutional and legal arrangements in Europe

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1. Aims and objectives of the study

This report presents the findings of a study of the institutional and legal arrangements in place across European countries, (EU Member States and PHARE countries) for the purposes of reporting on the State of the Environment. **The objective of this study is to provide an overview of national legal and institutional arrangements and experiences for State of the Environment (SOE) reporting.** The study seeks to separate technical and political issues and to examine objectively the ways that SOE reports function as inputs to the policy process.

The review is based on information collected from interviews with representative individuals involved in the publication of State of the Environment Reports in each Member State. In general, only one interview was carried out per country, although we recognise that it is common for there to be several different SOE activities within a single country. It is therefore important to understand that the aim of the Report is to provide an overview of general practices and not to evaluate SOE reporting in individual countries. **In particular, the report should <u>not</u> be used to compare specific practices in SOE reporting between countries**.

2. Introduction

The European Environment Agency (EEA) was launched by the European Union (EU) in 1993. Its mandate is to provide objective, reliable and comprehensive information on the European environment, for the following purposes:

- To assist the European Communities and the Member States to take the requisite measures to protect their environment;
- To assess the result of environmental protection measures;
- To insure that the public is properly informed about the state of the environment.

Membership of the EEA is open to other countries that share the concerns of the EU and member states and the objectives of the Agency. Current membership includes all 15 EU states, as well as Iceland, Liechtenstein and Norway.
The Agency seeks to provide information on the quality, pressures, and sensitivity of environmental systems and media, targeted principally at Community environmental policy implementation and appraisal. The responsibilities of the EEA cover all environmental media. It has a particular role in relation to trans-frontier, multinational and global phenomena and must also take into account socio-economic aspects of environmental issues.

It follows from the above mandate that a key function of the EEA is the preparation of regular reports describing the state of the European environment. These reports are targeted at the European Commission, the Council of Ministers, the European Parliament, the Member States, international organisations and the general public. Reporting by the EEA focuses on the European dimension, including analysis of European-wide environmental problems, appraisal of EU policy and the particular challenge of trans-frontier issues.

SOE reporting usually involves a data-collection exercise of considerable magnitude. In the EEA, the job of data handling, analysis and assessment is not centralised, but is carried out by national monitoring centres and other bodies in a European Information and Observation Network (EIONET). Apart from the data provided through EEA-EIONET, a vast amount of data comes from other sources. To a large extent, these activities are mirrored in each of the Member States, where government agencies have similar responsibilities to report on the SOE, involving the aggregation and summarising of suitable data, information and statistics from a national perspective.

National SOE reporting therefore plays a key role in making available information for appraisal at the European level. Clearly, streamlining the flow of this type of information would have major benefits for both the national and the European reporting process. Indeed, the optimal solution would be for the European and national data collection to be run largely in parallel. The European Environment Agency is working gradually towards this goal.

The proposed approach is not to issue strict guidelines, but to work together with the member countries to develop common frameworks. An important instrument in this process is a group of national experts in SOE reporting established by the EEA. This group, called the 'EEA Expert Group on Guidelines and Reporting', helps the Agency to identify common requirements to develop products. The group consist of experts from the 18 EEA member countries and from the 13

countries participating in the PHARE programme. The following Report was originally written to provide this group with background information on current practice in the Member States, to inform their discussions of possible approaches. However, it provides a useful overview of options in organising State of the Environment reporting for all those involved, being it government officials in an environmental minister or compilers of reports.

The purpose of SOE reporting is 'to support decision making through the provision of credible environmental information' (UNEP/DEIA, 1996). Key characteristics of good SOE reporting are that reports should:

- be based on credible and defensible scientific evidence;
- address both current states and future trends. In other words, the approach should be both descriptive and predictive. This implies the need for formal modelling frameworks, based on agreed future scenarios;
- be holistic and integrated. Approaches need to consider socio-economic drivers, environmental responses and legislative / regulatory actions, as well as physical exchanges and interactions between the different environmental media;
- incorporate some mechanism for appraising the effectiveness of existing and planned environmental legislation.

Given the complexity of most environmental issues, the achievement of these aims requires a sound conceptual framework, within which the assessment is carried out. This framework must take account of a multitude of non-linear causal links from human activities, through environmental pressures, states and impacts, to political responses to the perceived problem. The EEA has adopted the so-called DPSIR (Driving forces, Pressures, States, Impacts, Responses) framework for integrated environmental assessment (NERI, 1995), and this approach will clearly feature prominently in the intended guidelines for SOE reporting.

However, for a common approach to SOE reporting to gain widespread acceptance, it must be based on a sound understanding of the legal and institutional arrangements in place in European countries. The strength of the science base and the completeness of the environmental information resource are crucial issues that could influence the feasibility of implementing new procedures. It is the primary purpose of this Study to assemble the information needed to provide these insights. Rump (UNEP/DEIA, 1996) identifies a number of broad institutional considerations that influence approaches to SOE reporting:

- **Policy and legislative requirements**. To what extent is there a legislative requirement for SOE reporting? Although this can take place within the general framework of environmental legislation and practice, an explicit legislative basis for SOE reporting has the particular advantages of demonstrating political commitment and providing longer-term stability.
- **Institutional setting**. Here, it is necessary to strike a balance between the need for objectivity and independence from legislative or executive bodies, and the need to ensure good feedback to policy makers. Links to relevant sources of information and scientific expertise are also of vital importance. In practice, the environmental policy and legislative framework differs between countries, and no single model is appropriate to all circumstances.
- **Strategic objectives and programme evaluation**. By no means all SOE reporting is undertaken in response to clearly specified objectives or approaches. Where a clear strategic plan exists, it provides a common

frame of reference and a useful basis for evaluating the effectiveness of the reporting machinery.

- **Institutional capacity building**. In some countries, and, within countries, in some sectors of the environment, there may be a need to strengthen the capacity of some of the institutions involved in environmental appraisal. An important product of environmental assessment in the EEA is its contribution to capacity building, through **'improved access, management and use of available data, the development of national and regional networks for data sharing and improved quality and delivery of information for reporting.'** (UNEP/DEIA, 1996).

In the following pages, we report on each of these issues, on the evidence of current arrangements for SOE reporting in the Member States of the EEA and other representative European countries, and draw attention to their implications for a common approach to environmental assessment at the European level.

3. Methods

The study was undertaken mainly through structured interviews, conducted by telephone or in person with key individuals involved in SOE reporting in nine European countries (Table 1). In addition, written responses were received after the closing date for comments from contacts in Bosnia-Herzegovina, Estonia, Lithuania and Macedonia. Although it was not possible to include these returns in the formal tabulation of results, the comments are summarized in Annex 1 and have been taken into account in drawing conclusions in Section 8 of this Report. We would like to thank all the interviewees and we appreciate the effort invested by them in carrying out this task. The interview material was supplemented by evidence acquired from published national SOE reports.

An interview form containing 64 questions was prepared, based on an extended literature review on SOE reporting, including examples of reports published by various national and international bodies, and drawing on discussions at the March, 1998 meeting of the SOE Expert Group. Non-standard responses to all questions were permitted, and allowance has been made in the analysis of the questionnaire returns for any supplementary information provided. After completion, each interview form was sent to the interviewee for comments and corrections. The material was then used as the basis for the analyses described in the following sections.

Table 1. Identity of experts interviewed

Country	Interviewee	Organisation
Czech Republic	Jaroslav Benes, Erich Lippert, Tereza Votockova	Ministry of Environment Czech Environmental Institute
Denmark	John Holten-Andersen	National Environmental Research Institute
France	Thierry Lavoux	Institut Francais de l'Environnement
Hungary	Pal Bozo	Ministry of Environment
Ireland	Larry Stapleton	Environmental Protection Agency (EPA)
The Netherlands	Janneke Hoekstra	National Institute of Public Health and Environmental Protection (RIVM)
Norway	Øystein Nesje Frode Brunvoll	Miljøverndepartementet (MD) / Ministry of Environment Statistisk sentralbyrå (SSB) / Statistics Norway
Slovak Republic	Juraj Bebej	Slovak Environment Agency (SEA)
UK	John Seager	Environment Agency
Written responses only		
Bosnia-Herzegovina	Ahdin Orahovac	Federal Ministry of Physical Planning & Environment
Estonia	Andrus Meiner	Estonian Environment Information Centre
Republic of Macedonia	Svetlana Gjorgjeva	Ministry of Urban Planning, Construction & Environment
Lithuania	Antanas Didziapetris	Environmental Ministry, Joint Research Centre

4. Characterisation of SOE products in the selected countries

Traditionally, the concept of an SOE report has tended to be reserved for a description of an authoritative and comprehensive document, recording status and (perhaps) trends in quality across the various environmental media. Although these periodic comprehensive assessments are a valuable means of reviewing environmental change, and may be the legal basis for the process of SOER itself, in most of the countries surveyed, they are by no means the only tool available for the purpose. There is a wide range of potential users of SOER, including policy makers, regulators, scientists, educators, elected representatives and the general public. The potential therefore exists to deploy a diverse suite of publications and other information products which may be better targeted to the needs of this user base than the traditional SOE report.

The following analysis reviews the range of SOE products published in the nine countries considered in this study. The analysis identifies the type, publication frequency and purpose of the various SOE products and their target audience(s). Table 2 provides clear evidence of the variety of outputs published. These range from SOE reports *stricto sensu* through to statistical compendia and compilations of environmental indicators.

Table 2. SOE publications in the countries surveyed

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Periodic Comprehensive Assessment	CZ01 (annual)	DK01 (every 4 years)	FR01 (every 4 years)		IR01 (every 5 years)	NL02 (every 4 years) NL03*	NO05 (annual)	SL01 (annual)	UK01 (one-off)
Summary or update reports	CZ03 (annual)	DK02 (annual)	FR02 (annual)		IR02	NL01 (annual)	NO03 (irreg.), NO04 (annual)		UK02 (cont.)
Statistical compendia	CZ02 (annual)	DK03 (every 4 years)		HU02, HU03		NL04, NL05	NO01 (every 2 years), NO02 (annual)	SL02 (annual)	UK05
Environmental Indicators		DK02		HU01	IR03				
Thematic or regional reports	CZ04 (irreg.)		FR03 (irreg.)				NO06 (irreg.)	SL03, (irreg.)	UK03, UK04 (one-off)

Annual Natuurbalans report and four-year outlook report Natuurverkenning.

Key:
- CZ01 Annual State of the Environment Report
- CZ02 Statistical Yearbook
- CZ03 Brochure, published by the Statistical Office
- CZ04 Thematic and sub-national publications
- DK01 The Environmental State in Denmark. *Comprehensive Danish SOE Report, covering most environmental issues and the socioeconomic pressures on the environment.*
- DK02 Environmental Indicators. *SOE publication, based on environmental indicators and aimed at the general public. 30 000 copies published and distributed free of charge.*
- DK03 Nature and the Environment in Figures. *Annotated environmental statistical compendium.*

FR01 National SOE Report
FR02 Environmental Indicators Report
FR03 SOE in the French Regions
HU01 SOE Indicators
HU02 Environmental Data Compendium
HU03 Statistical Compendium. *Joint publication of Statistical Office with several Ministries.*
IR01 National SOE Report
IR02 Summary Report. *Summary of the full National SOER.*
IR03 1998 Indicators Report
NL01 Milieubalans. *Annual report to Parliament on the State of the Environment; also background report, including detailed analysis and data.*
NL02 National Environmental Outlook. *Also 4-year background outlook report, including detailed analysis and data.*
NL03 Natuurverkenning 97. *May in future be split into an annual Natuurbalans Report and a 4-year Outlook.*
NL04 Environmental Statistics of the Netherlands
NL05 Emissions the the Environment.
NO01 Natural Environment in Figures. *So far, one published in 1994.*
NO02 Natural Resources and the Environment.
NO03 White Papers
NO04 State of the Environment and Environment Budget Proposal to Parliament
NO05 Fact Sheets for Miljøverndepartementet statements
NO06 Technical Reports by Departments
SL01 State of the Environment Report
SL02 Statistical Yearbook
SL03 Thematic and other reports with monitoring data
UK01 The Environment of England & Wales: a snapshot (1966). Corresponding publications for Scotland & N. Ireland
UK02 UK Environment Agency Internet Web site
UK03 Viewpoint on the Environment (1997). *Consultation paper addressing monitoring.*
UK04 Thematic Reports on freshwaters, bathing water quality, endocrine disruptors, etc.
UK05 Digest of Environmental Statistics

In almost every country, the main SOE report is viewed primarily as a working source of information (see Table 3). Most countries also publish summaries of the main report, as a non-technical description of environmental status. Policy makers are the principal audience for SOE reports, though politicians and the general public are also viewed as important audiences (Table 4). The scientific community and the private sector are generally seen as less significant users and research funding bodies are rarely considered a priority. Given the diversity of the readership, it is not surprising that, in every country save one, different reports are published, aimed at the different audiences.

Table 3. Primary purpose of main national SOE report

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Main SOE Report is response to statutory requirement or a working reference. Score 1-5, where 1 indicates the former and 5 the latter.	5	3	5	5	3 - 4	1	5	?	5
Main SOE Report published as brochure or technical document. Score 1 - 5, where 1 indicates the former and 5 the latter.	1 / 5	4	5	*	3 - 4	4	1 / 5	2	4 - 5

Table 4. Principal audience for national published SOE reports (1 = most important; 6 = least important)

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
1	Policy	Policy	*	Policy	Policy	Politicians	Politicians	Policy	Policy
2	Politicians	Politicians	*	Politicians	Public	Policy	Policy	Politicians	Public
3	Public	Public	*	Public	Politicians	Science	Public	Public	Science
4	Science	Science	*	Science	Private	Public	Funding Bodies	Funding Bodies	Politicians
5	Private	Private	*	Private	Science	Private	Private	Science	Private
6	-	Funding Bodies	*	Funding Bodies	Funding Bodies	-	-	Private	Funding Bodies

Policy = Policy Makers; Private = Private Sector; Funding Bodies = Research funding bodies

* Principal audience: (i) consultants (scientists, private companies, etc.), (ii) journalists, (iii) sectoral administrators (Minister's cabinet, Director Generals, civil servants)

There appear to be significant differences in perceptions of the importance of SOE reports as educational tools (Table 5); where this is seen as important (in about half the countries considered), specially designed outputs are normally published for the purpose.

Table 5. SOE reports as education tools

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Public education is a primary aim of SOE reporting	No	No	No	No	Yes	No	Yes	Yes	Yes
Additional material produced specially for the education sector	No	No	No	Yes	Yes	No	Yes	Yes	Yes

5. The process of SOE reporting: institutional arrangements

5.1. Institutional considerations

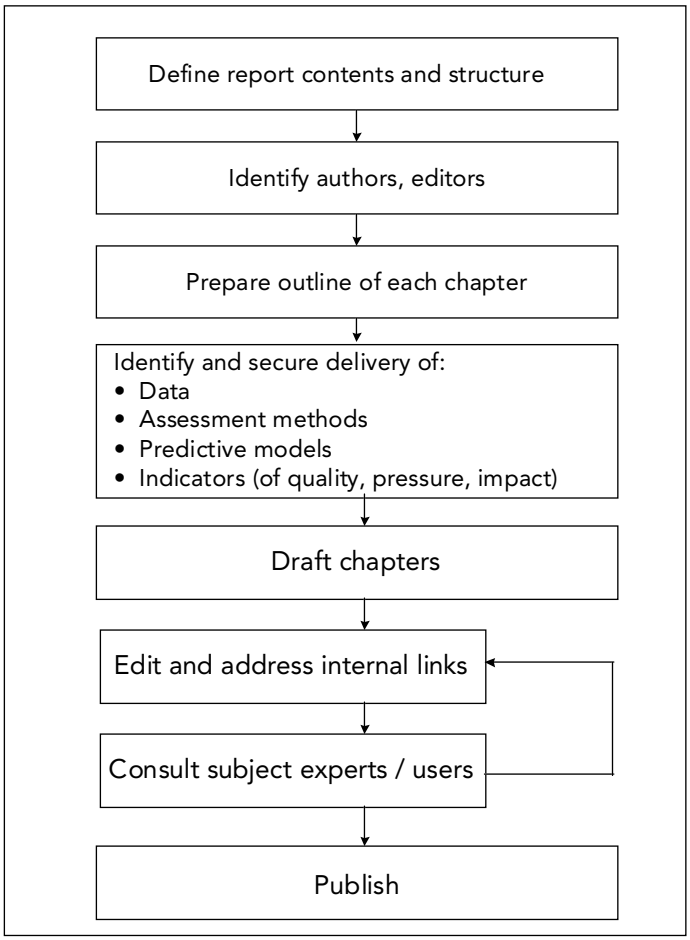
Many factors determine the institutional arrangements for SOE reporting (SOER) in any given context. These include:

- Any statutory requirements that are in place for environmental assessment, and the identity of the bodies that have been given the responsibility to deliver these obligations. Where specific legal requirements are in place, they are likely to be prescriptive in defining the structure, content, source material and assessment procedures to be used. However, the range of SOER products offered may not necessarily be constrained to those prescribed in the legislation (see Table 2 above).
- If there is no statutory requirement for SOER, then it is important to identify clearly the body responsible for defining the purpose, structure, content, procedures and output formats used.
- The relationship of the SOER body to policy units in government. For maximum credibility, the SOER unit should be independent of policy, but effective deployment of environmental assessment in policy development requires that good links be maintained between these groups.
- The relationship of the SOER body to national statistical agencies, where these differ. National statistical agencies are usually the main source of information and insights into socio-economic states and trends. These are important factors in influencing environmental change. Increasingly, statistical offices are also beginning to compile data and indicators on environmental quality. Sometimes, these activities result in the publication of parallel outputs that each address aspects of environmental assessment. For all the above reasons, it is important to ensure effective communication between the body with responsibility for SOER and other official statistical units.
- Links to levels of government other than that to which the SOER body is directly responsible. This is particularly important in the EU and EEA context, where national SOER activities provide important inputs to environmental appraisal at the EU level. Similar considerations apply when sub-national bodies have responsibility for SOER. It is important that these different levels of activity are 'nested' in a planned and orderly manner, to ensure efficient use of resources and to avoid conflicting information, for example, as a result of the use of different models or appraisal methods.
- The target recipients of the SOE products. Publications aimed at policy makers or the general public require different presentational skills compared with those targeted at a scientific audience.
- The level of scientific expertise within the SOER body to execute in-house scientific appraisal, which may need to include formal predictive modelling. It is rare for the range of skills needed to conduct systematic environmental assessment across all the environmental media to be available within a single institution. This implies the need for detailed technical consultation with a range of different bodies, including the research community, as well as government experts and, perhaps, private consultants.
- The degree to which SOER bodies have direct access to the information needed to underpin environmental assessment and modelling. SOER is critically dependent on access to large volumes of timely and geographically

representative information. Official statistical compilations, though important, are rarely sufficient. This factor also predicates links to the widest possible range of institutions involved in the routine capture of information on environmental states and trends.

Key steps in the SOE reporting process are indicated in Figure 1. The following Section of this Report presents examples of some of the institutional arrangements in place to execute these tasks. Section 5.4 provides a summary of the different approaches adopted within the organisations consulted in this study.

Figure 1. Steps in the process of SOE reporting



5.2. Alternative organisational arrangements for SOER

Given that SOE Reporting is essentially an activity undertaken by government, the key institutional choices are: (i) for the activity to be undertaken within an existing government department; (ii) to create an agency charged with the specific task of SOER; (iii) to charge an existing governmental agency with the task; (iv) to contract the work to an institution in the private or research sectors. The main issue is whether to remove direct links between government departments and SOER. The relative advantages and disadvantages of the two strategies are highlighted in Table 6 (UNEP/DEIA, adapted from Environment Canada, 1992).

Table 6. Basic institutional models for SOER

Type of Agency	Advantages	Disadvantages
Existing Government Department	• Rapid start-up • Limits proliferation of special agencies • Existing regional networks • Greater collaboration within government • Access to data and information	• Not recognised as independent • Limited public profile • Less stakeholder involvement • Tends to protect the status quo
Arm's-length Agency	• Independent • High profile and visibility • Potential for innovation and greater efficiency • Links to non-governmental stakeholders and scientists	• High transmission costs • Requires formal powers of access to data • Uncontrolled stakeholder influence • Lack of regional networks

Irrespective of the model that is adopted, the SOER body is ultimately answerable to government, because it is government that initiates the activity. Almost without exception, the governmental department that has oversight of SOER is the department or ministry of environment. Nevertheless, many other departments of state and a variety of local government and non-government institutions will be involved in the process, either as providers of information, advice or expertise, or as users or interested parties in the conclusions and recommendations of the published report (Figure 2).

In the European context, SOER is even more complex. Here, in addition to the requirements placed upon the EEA by the Directorates of the EC, the Agency has responsibilities to the European Parliament and to national governments, through the Council of Ministers. Furthermore, the EEA has limited access to data or statistics collected at the EU level, and must instead establish working relationships with the Member States (through EIONET), with various European agencies (notably Eurostat and the Joint Research Centre) and with other pan-European institutions, including NGOs. The European Topic Centres of the EEA provide a vital mechanism for accessing specialist scientific expertise within the various environmental media (see Figure 3)

Figure 2. Network of institutions with a role in SOER

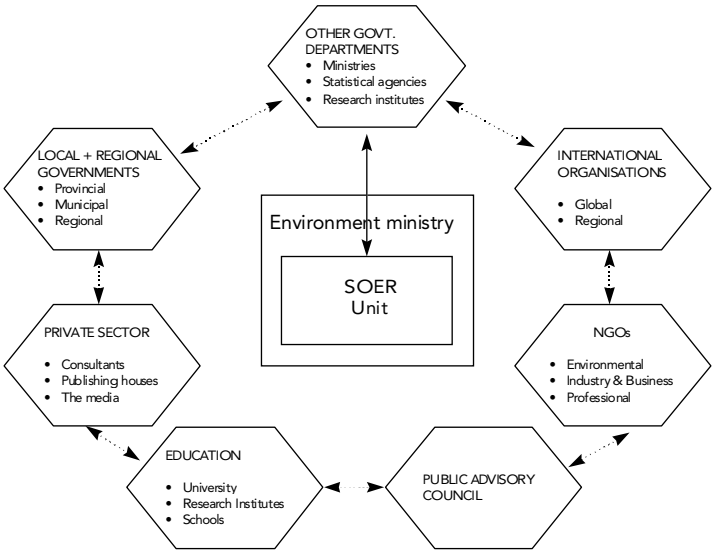
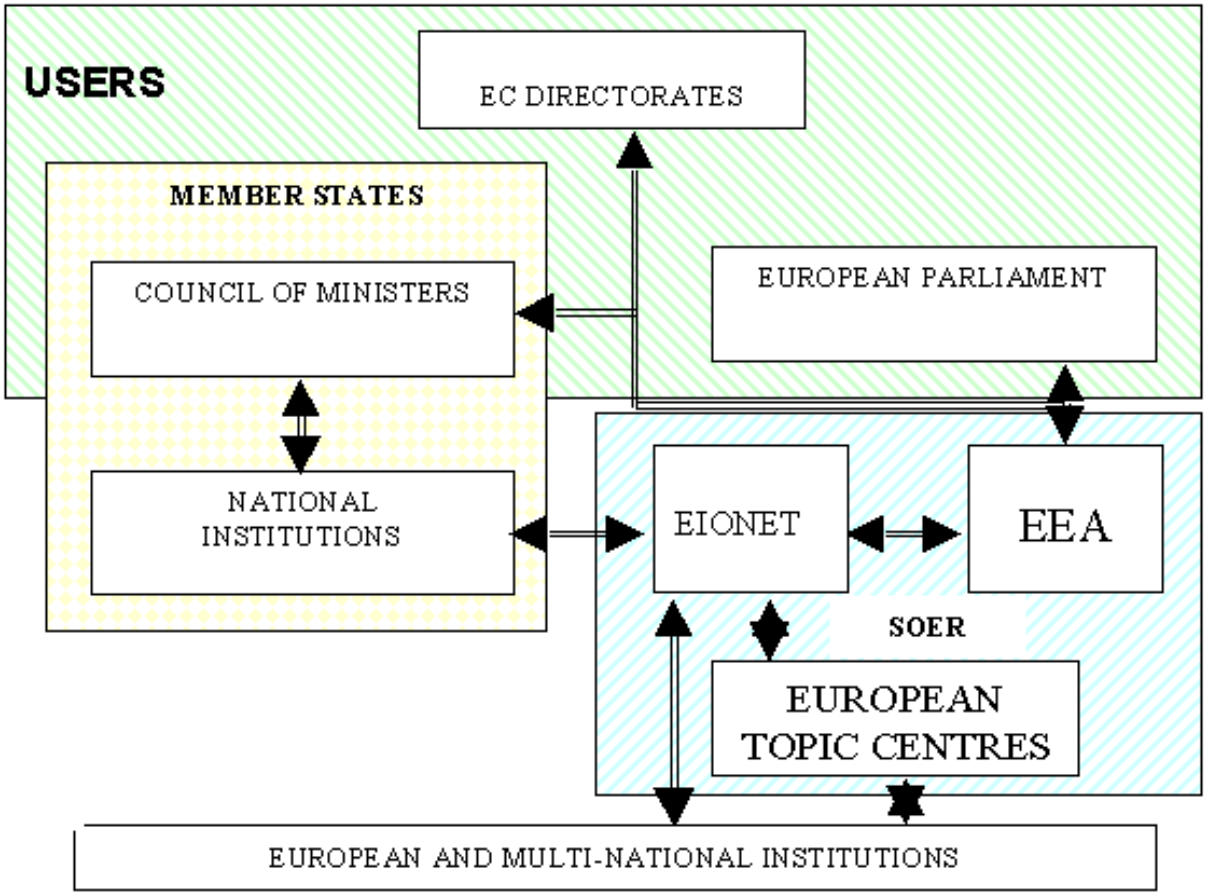


Figure 3. The institutional setting for SOER in the EU



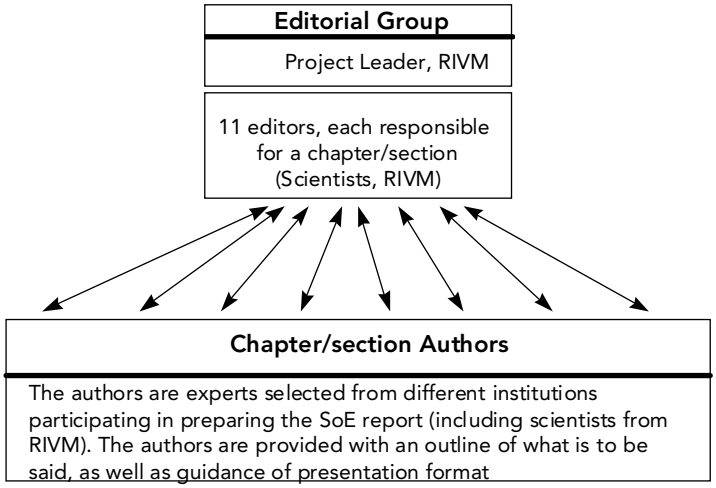
5.3. Institutional arrangements for SOER in European countries

In about half the countries that we considered, responsibility for SOE reporting is assigned to a body with the status of a Government Agency. In three countries (Hungary and the Czech and Slovak Republics), responsibility is retained within government departments. In Hungary, the Ministry for the Environment is the responsible body and, in the Czech and Slovak Republics, the task is shared by a number of ministries. In the remaining countries, SOE reporting is collaborative between government departments, government agencies and research institutes (Table 7). Figure 4 depicts the situation in the Netherlands, where there is formal joint responsibility for contributions to a national SOE report, coordinated by an editorial group, led by RIVM (an independent government research institute).

Table 7. Institutional background to the organisation primarily responsible for national SOER

CZ	DK	FR	HU	IR	NL	NO	SL	UK
Ministry	Mixed	Agency	Ministry	Agency	Agency	Ministry	Ministry	Agency

Figure 4. Organisational provision for SOER in the Netherlands



In many of the countries interviewed, the national Statistical Office (NSO) is actively engaged in SOER. The NSO is often a key source of data for SOER, notably data on socio-economic trends that impact on the environment; increasingly, the NSO is instrumental in computing and disseminating environmental indicators and it may also participate in the task of preparing SOE reports, either in association with the main SOER body or in parallel. In such cases, there is generally cooperation between the two organisations in the preparation of the Report although, where both the NSO and the MoE publish reports, there is frequently overlap between the two products. Although it is possible (and desirable) to minimise overlap, for example, by ensuring that the report produced by the NSO focusses on 'pressures', such as emissions, while the MoE addresses environmental states and problems, it is clear from our survey returns that this is not always the case. In at least one example, there is disagreement between NSO and MoE as to whether there is overlap between the reports they each publish.

Given the different legislative frameworks and environmental policies that operate across Europe, it is not surprising that no two countries have adopted an identical institutional model for SOE; indeed, there is probably no single model that is appropriate to all circumstances. In practice, each country must seek to ensure that the reporting process is independent from the legislative or executive function, but that there are good links between environmental appraisal and policy makers. The importance to the assessment process of having access to datasets and insights that are scientifically credible cannot be over-stated. The requisite scientific skills are not always available within the SOER body, so it is important to ensure that the external links shown in Figure 2 are given due consideration.

5.4. SOE reporting tasks: institutional aspects

In the following paragraphs, we use information from the questionnaire survey to provide insights into the ways in which these overall responsibilities for SOER are translated into specific tasks in the assessment process.

5.4.1. Budget

Table 8 estimates the annual manpower resources committed to the task of SOER in each country. These estimates are in every case approximate and subject to interpretation of the original returns.
It is therefore difficult to make meaningful comparisons between national SOER programmes that are often radically different in approach. Nevertheless, it is clear from the data presented that the investment in SOE reporting at the national level across Europe is significant. Assuming that the quoted estimates are representative of the **EEA and PHARE countries** as a whole, the annual level of resources committed to this activity cannot be less than 75 man-years across **the region.**

Table 8. Approximate annual budget for SOE reporting activities

CZ ECU	DK Man years	FR Man years	HU	IR Man years	NL Man years	NO Man years	SL	UK Man years
7000[1] 14000[2]	1.5	1.6 - 2.5	?	1	12	4+	?	5 - 10

[1] SOE Report [2] Statistical Yearbook

Notes:
CZ – Statistical Yearbook: 14 000 ECU including staff costs + data in kind. SOE: under 7 000 ECU + fees at MoE
DK – Total resource for the SOE Report is around 40 - 60 person-months
FR – 20 - 0 person-months + 230 000 ECU for sub-contracts
HU– Budget not separately undentified.
IR – 1 man-year at present, increasing significantly in 1999.
NL – Annual SOER requires 500 person-weeks by RIVM + 175 kECU to contracted institutions. Estimated resource to produce the 4-year Outlook Report is greater than the resource needed for the annual publication.
NO – 4 person-years at MD + Departmental budgets + 800 000 NOK in SSB.
SL – 9 000 ECU direct publishing costs only.
UK – £500K pa for 'making information available to the public'.

5.4.2. Structure and content

The structure and content of national SOE reports are usually determined by the organisation responsible for delivering the report (Table 9). In general, this organisation resides either in the Ministry of the Environment or in an 'arms-length' government agency (Table 7). Various arrangements are in place to ensure communication between stakeholders. In the UK, there is a formally constituted Liaison Group, co-ordinated by the Environment Ministry, which provides links with the various bodies involved in SOER. In Denmark, the editorial group in NERI discusses content with representatives of the appropriate Ministry. In Ireland, the SOER body (EPA) invites comment on a draft list of contents *via* the Internet.

Table 9. Responsibility for structure and content of the SOE product

CZ	DK	FR	HU	IR	NL	NO	SL	UK
MoE*	NERI*	IFEN*	MoE*	EPA*	RIVM*	MD*, SSB* + other organisations	MoE*	Inter-Agency Inter-Dept. Forum

* The organisation responsible for preparing the SOE report

Most respondents indicated that the overall contents of SOE reports are determined objectively in relation to environmental issues, rather than on the basis of the organisation or responsibilities of particular government departments (see Table 10), although some countries publish compendia of data or statistics organised along administrative lines. In reality, there are a number of examples in which administrative issues appear to influence the contents. In the Netherlands, although there are no restrictions on the issues covered in the reports, their structure reflects the administrative structure of government. In Denmark, the SOER includes a chapter on conservation of buildings, reflecting the responsibilities of the MoE in this area, and the UK SOER ignores issues of agriculture and the environment, which fall within the remit of the Ministry of Agriculture.

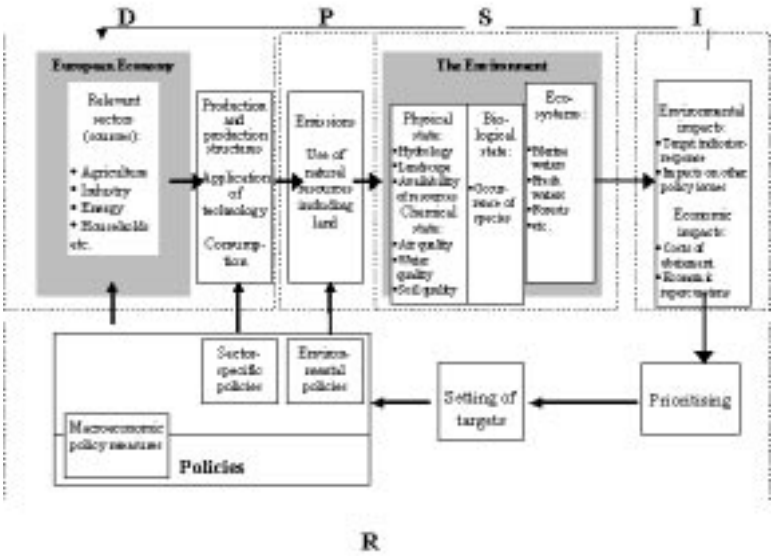
Table 10. Considerations that determine overall content of the SOE report. (1 = departmental responsibility, 5 = general environmental issues)

CZ	DK	FR	HU	IR	NL	NO	SL	UK
5	4	5	5	3 - 4	5	1[1], 3[2]	5	5

[1]MD [2] SSB (see Table 1)

In the EU, SOER is increasingly undertaken within a structured framework, which distinguishes Drivers, Pressures, States, Impacts and Responses (see Figure 5 and NERI, 1995). There is a similar trend nationally to adopt a reference framework for environmental assessment; both France and Ireland mention the use of the OECD 'PSR' framework, though IFEN has modified the pressures, in the interest of clearer understanding by non-technical readers. The UK Liaison Group on Environmental Information has produced a draft strategy for SOER. Frameworks such as this permit the published reports to reflect the activities of government bodies.

Figure 5. Integrated environmental assessment in a DPSIR framework From NERI (1995)



Generally, stakeholders (data providers, authors, end users) are consulted when deciding the structure and contents of the report (Table 11). In cases where the SOE report is being prepared for the MoE the outline is distributed within the MoE for comments and may be circulated to other ministries. The authors are in all cases asked to comment on the outline. In France, the statutory order under which IFEN was established requires consultation with a committee of end users, but they tend to be more 'down-stream' in the SOE process, commenting upon final content and summaries.

Table 11. Consultative procedures: groups consulted over design of structure and content of the report

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Data providers	Yes	Yes	No	Yes	Yes	Yes	Yes/P	Yes	Yes
Authors	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
End Users	-	Yes	Yes	-	Yes	Yes*	-/P	Yes	Yes

P: partly

*Including politicians and the scientific community

5.4.3. Identification of users and information providers

Government generally determines users of SOE reports, which reinforces the earlier conclusion (Table 4) that the main audiences for SOER are policy makers and political groups. The principal users are often identified in the regulation requiring the SOE report (Table 12). For example, the primary user of the Dutch annual SOE is parliament, because the law requires that RIVM reports annually to parliament on the state of the environment and how it is affected by government measures. Where, as in Ireland and the UK, the SOER body itself defines its users, consultative machinery is in place to ensure that government and other relevant bodies can influence the decision.

Table 12. Bodies who determine SOER users and information providers

CZ	DK	FR	HU	IR	NL	NO	SL	UK
MoE	NERI[1]	IFEN	MoE[2]	EPA[3]	the law	MD, SSB	MoE	EA[3]

[1] Users are partly self-selecting, since the report is an integral part of a rolling programme of strategic environmental planning.

[2] Guided by the requirements of the enabling regulations.

[3] Under the guidance of a national environmental data committee

5.4.4. Responsibility for resourcing and managing the publication process

The responsibility for resourcing and managing the publication invariably rests with the SOER body itself (Table 13). These responsibilities are often laid down in regulations, or agreed in advance with government. Where the SOER body lies outside government, funding is usually from core budget, but there may be provision to ensure a minimum level of effort is committed to the task.

Table 13. Body controlling production timetable and resources

CZ	DK	FR	HU	IR	NL	NO	SL	UK
MoE[1]	NERI[2]	IFEN[2]	MoE[1]	EPA	RIVM[2]	MD, SSB	MoE[1]	EA

[1]In response to statutory requirement.

[2]Timetable defined by government; resources from core Agency funding, with constraint on minimum to be committed.

5.4.5. Responsibility for authorship

Table 14 summarises the organisational arrangements employed by the different countries for writing national SOE reports. The most commonly used practice is to employ a network of authors with specialist scientific backgrounds appropriate to each chapter. In France, experts were specifically appointed, after interview, and worked to terms of reference, agreed with IFEN for each chapter. However, there has been dissatisfaction with the results of this approach and, in the future, to a certain extent, IFEN will adopt similar procedures to those currently used in Ireland and the UK, in which teams of specialist staff are deployed full-time for SOER writing. In the case of the UK, the interviewee felt strongly that this was the best approach, though, in both Ireland and the UK, specialist external assistance was needed in some areas.

Table 14. Authorship of SOE reports

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
i. Scientific Experts	-	Yes	Yes	Yes[1]	Yes	Yes	Yes	-	-
ii. Civil servants / Administrators	Yes	-		Yes[2]	-	-	Yes[3]	Yes	-
iii. Full-time team of SOER Specialists	-	-		-	Yes	-	-	-	Yes

i. A team of selected environmental scientists, consultants or experts, who form a network of authors for specific chapters.

ii. A team of civil servants or administrators specialising in environmental matters.

iii. A small team of full-time, dedicated staff, not necessarily with a background in environmental science.

[1] First draft

[2] Final draft

[3] With additional contributions from outwith the team

5.4.6. Guidelines for reporting

In most cases, authors are provided with guidelines on content, structure, and often on graphics and layout. In Hungary, the UK and, to a lesser extent, in Ireland, the process is much less prescriptive. In France, IFEN writes terms of reference for each chapter which it agrees with prospective authors. IFEN, in consultation with the expert author, writes a two-page summary that specifies the content and the illustrations to be used. EPA, in Ireland, issues its authors with style guides, while in Norway, there is continual consultation between the SOER body and the commissioned authors.

Table 15. Guidance provided to authors. (1 = detailed guidelines on structure, formats, data; 5 = complete freedom).

CZ	DK	FR	HU	IR	NL	NO	SL	UK
1 - 2	1 - 2	1 - 2	4	2 - 3	1	2 - 3	2	4

5.4.7. Provision of data and information

The principal information sources used in each of the reports are listed in Table 16. Government statistics (i) and data (ii) were used in every SOER. In three countries, (Czech Republic, Slovak Republic, Hungary), some data are collected specifically for the SOE report. In the UK, Ireland and France, the agency responsible for collecting SOE data is the same as the body that is charged with writing the report. Both Ireland and the UK mentioned the significance of the EEA and EIONET as sources of information on environmental quality in Europe, against which to draw national comparisons. IFEN noted the use of information from trade associations, industry, etc., to supplement government and research sources.

Table 16. Primary sources of information for SOER

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
(i) Government statistics	P	P	P	P	P	P	P	P	P
(ii) Government datasets	P	P	P	P	P	P	P	P	P
(iii) Data collected for SOER	P	-	P	P	P	-	-	P	P
(iv) Data held by authors	S	P	P	-	P	S	P	-	P
(v) International Data Centres	S	P	P	-	P	-	P	-	P

(i) Government statistics

(ii) Data sets held by Government-funded research organisations

(iii) Organisations with a responsibility for collecting and providing SOE data

(iv) Data held by the expert authors

(v) International data centres

P: Primary S: Secondary

More than half of replies identified current or previous problems with access to data (Table 17). There are continuing problems in France and the UK concerning conflicts over intellectual property, high charges for licenses and reluctance to allow data to be released. Both countries cited information on land cover as especially problematic. Norway and the Netherlands identified data charges as an issue. The Slovak Republic noted that national statistics tended to become available too late for use in the corresponding SOE report.

Table 17. Data access, processing and quality control

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Data access problematic? (1=No, 2=Sometimes, 3=Often)	1	1	2	2	1	2	1	2	2
Manipulation of data by SOER body, e.g. to generate useful environmental indicators (1 for no processing)	2 - 3	3	5	5	2 - 3	5	1	2	5
Quality control: (1 = None, 5 = exhaustive)	1	4	5	3 - 4	5	5	5	5	4 - 5
Consistency checks against other datasets? (1 = None, 5 = exhaustive)	* (3)	3	*	3 - 4	*	5	3[1], 5[2]	5	*

[1] MD, [2] SSB (see Table 1)

* Single sources used for all data, so questions of inconsistency do not arise.

SOE reports almost invariably involve some processing of raw data to environmental indicators of some form. Data are subject to quality control (QC) in all cases (the '1' returned in the case of the Czech Republic simply indicated that QC was not undertaken in-house). The UK, Ireland and Norway also rely primarily on data suppliers for quality control. France and the Netherlands place particularly high priority on QC. IFEN see the SOE reports they publish as 'documents of reference', and employ 2 staff full-time for 6 months in applying QC checks to every dataset. RIVM delegate responsibility for quality to their group managers.

In most cases, cross-checking with other data is either impossible or unnecessary, since the SOER bodies generally hold, or use the appropriate national reference data. However, RIVM do cross-check SOER with material published in other reports, while EPA, in Ireland, are setting up a Quality Assured indicators database, which it will be possible to use for reference in the future.

5.4.8. Editing and review of the report

Every SOER body recognised the need to exercise a measure of editorial control over the material provided by their authors, although it was difficult to draw any general conclusions from the replies received (Table 18). The common message was that the level of editorial intervention required was highly dependent on the

chapter and the author. Changes range from simple copy editing to complete re-writes. All teams mention the need for balance, the 'right message' and stylistic consistency as important factors in deciding the level of editorial intervention.
It is hardly surprising that there were significant differences to the question of government influence in editorial matters. The responses depended very much on whether the SOE report is written in a government department or in an 'arms-length' agency. Both in the UK and in Ireland, the Agencies are operationally independent, and the reports are published 'in the opinion of the Agency'. Government departments are invited to comment but, although some areas are sensitive, there have been no major differences of opinion, Similar observations hold in the case of France, Norway and the Netherlands.

Table 18. Editing of the report

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Extent of editorial intervention (1 = minor copy editing, 5=substantive changes)	3	3 - 4	5	2 - 3	1 - 2	3 - 4	5[1], 4[2]	2	5
Final editorial control: (1 = SOER independent of government, 5 = direct government influence)	5*	2 - 3	1 - 2	5*	1	1 - 2	3	5*	1

[1]MD (see Table 14), [2]SSB (see Table 1)
* SOER body is Government Department

Most commonly, formal review of the report is by consultation with the parent government department and with other departments with an interest in the results (Table 19). Sometimes, other stakeholders (authors, data providers, staff of the SOER body itself) are also consulted.
The final decision invariably rests with the body undertaking the SOER. In certain cases, this responsibility lies within the Ministry of Environment. In France, although *formally*, responsibility rests with the Minister, in practice, the decisions are taken in IFEN.

Stakeholders are variously consulted during the editing of the report. In most cases, there is a final consultative process immediately prior to publication. A number of countries direct these consultations through formal representative committees (Ireland - National Environmental Data Committee, Hungary — National Council for Environmental Protection, Czech and Slovak Republics — Inter-Ministerial Steering Committees, France - Committee of Users and the IFEN Scientific Council). In the Netherlands, the report is coordinated with the four-year National Policy Plan.

Table 19. Review and consultation

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
SOE report sent out as a draft for review and comment by:									
Ministry of the Environment		Yes	Yes	Yes	Yes	Yes		Yes	
Other government departments	Yes			Yes	Yes	Yes		Yes	Yes
National scientific / technical experts	Yes					Yes			Yes
Data Providers					Yes				
Internal review in the SOER body		Yes				Yes			
Authors	Yes						Yes		
Stakeholders consulted during editing of the report?									
End users			Yes						Yes
Authors		Yes	Yes			Yes	Yes		Yes
Data providers			Yes				Yes		Yes
Representative body	Yes		Yes	Yes	Yes			Yes	
Final consultation before publication?									
A final consultation immediately prior to publication	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Final responsibility for contents and presentation									
SOER body			Yes	Yes	Yes	Yes	Yes		Yes
Ministry of Environment	Yes	Yes	Yes					Yes	

6. The process of SOE reporting: legal arrangements

6.1. Introduction

It is important to understand the legislative background to SOER, since this may have a significant bearing on the institutional arrangements and on the actual processes of assessment and reporting. The existence of legislation requiring the collection of statistics or the publication of reports is likely to define the minimum scope of such activities, and may even specify their structure and content. If the legislation is restrictive in its aims, this could be interpreted as a constraint on the topics that may legitimately be included. Conversely, the absence of enabling legislation may, on the one hand, give the SOER body considerable freedom of action but, on the other hand, may mean that the resources for successive assessments are less secure.

A specific legislative provision is not absolutely necessary for the implementation of a successful reporting programme (UNEP/DEIA, 1996). Nevertheless, a statutory basis for SOER lends credibility and stability to the programme, by committing government to actions that imply acceptance of public accountability and a willingness to respond to objective scientific evidence about environmental quality and environmental change.

The motivation for SOER and its basis in legislation, although diverse, can be explained in relation to three broad objectives (Table 20). The first concerns government's accountability for the effectiveness of its environmental housekeeping. Under its care, is the environment improving or deteriorating? What are the future prospects? In the European context, the role of SOER as a means of informing the public in this way was given special prominence by the adoption of the resolution on access to information, public participation in decision-making and access to justice, that was approved at the fourth Ministerial Conference of the UNECE in Aarhus in 1998 (see Box 1).

Box 1. Aarhus Convention — Article 4

ACCESS TO ENVIRONMENTAL INFORMATION

Each Party shall ensure that environmental information progressively becomes available in electronic databases which are easily accessible to the public through public telecommunications network. Information accessible in this form should include:

(a) Reports on the state of the environment as referred to in paragraph 4 below;

(b) Texts of legislation on or relating to the environment;

(c) As appropriate, policies, plans and programmes on or relating to the environment, and environmental agreements, and

(d) Other information, to the extent that the availability of such information in this form would facilitate the application of national law implementing this Convention, provided that such information is already available in electronic form.

Each Party shall, at regular intervals not exceeding three or four years , publish and disseminate a national report on the state of the environment, including informatio.n on the quality of the environment and information on pressures on the environment.

The second requirement is for the objective information necessary for framing and implementing (and reviewing the adequacy of) sound and effective environmental policies (CEC, 1990). This implies the need for sound environmental assessment procedures, backed up by access to comparable data of appropriate quality. The capacity for modelling future conditions is central to this function. Audit and appraisal of the effectiveness of current legislation should be a feature of all SOER, although, in practice, there are few examples of a statutory audit function. The final purpose of SOE reports is to support the implementation of environmental policy, by providing information on and justification for environmental standards, against which can be set limits for regulation and control.

Table 20. Legislative basis for SOER

Public accountability	Policy guidance	Policy implementation
Public information	Assessment	Protection
Education	Forecasting	Regulation
National statistics and records	Audit	Control

The following sections examine the consequences of the differing emphasis placed on each of these aspects of SOER in the nine European countries that contributed to the survey.

6.2 Description of legal basis in the selected countries

6.2.1. Legislative measures

In all countries of the European Union, EC Directive 90/313 (article 7) imposes a statutory requirement for SOER. In every country except Denmark, SOER is also based upon national statutory or regulatory measures (Table 21). The purpose of the legislation varies between countries, with the emphasis on protection and regulation, public information and sustainable development. Only in the Netherlands is there an explicit legal requirement for the SOER to evaluate how the state of the environment is affected by government measures. In Norway and in the Czech Republic, laws require the collection of national statistics, including statistics on environmental quality.

Table 21. Legislative basis for SOER in European countries

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Is SOER based on a statutory requirement?	Yes	No	Yes	Yes	Yes	Yes	Yes[1] No[2]	Yes	Yes
Legislative focus									
Protection / regulation				Yes	Yes	Yes			Yes
Sustainable development					Yes	Yes		Yes	Yes
Public access to information	Yes			(Yes)	Yes			Yes	Yes
Adoption of additional instruments (e.g. EIA)						Yes			
Review of government action						Yes			

[1] MD (see table 17), [2] SSB (see Table 1)

6.2.2. Implementation of SOER legislation

As indicated previously, SOER can be conducted using either of two fundamental institutional models, based on existing government department structures or on the deployment of more or less independent agencies. The two models feature with about the same frequency in the countries consulted in our survey (Table 22), and this fundamental institutional difference, more than any other, reflected

in key differences in practice noted in the survey results. One country (Denmark) adopted a mixed model, in which responsibility was shared between NERI (a research instition within MoE), being the Agency responsible for producing the Report, and the MoE, who participated actively in the editorial stages.

Table 22. Type of national SOER model

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Existing government department	Yes	Yes		Yes			Yes	Yes	
Independent agency at arm's length		(Yes)	Yes		Yes	Yes			Yes

6.2.3. Legislative measures governing SOER

The data that are available to support SOER can have a major influence upon what assessments are possible, or upon the results of the assessments that are conducted. For example, a requirement to use official sources of information might unduly influence the findings of the SOE report. Of the nine countries consulted, only in Hungary is there a legal requirement to use government information, and this was not perceived as leading to problems. In those countries that were free to choose the sources of the information used, several expressed a preference for official data.

Legislation existed in about half the countries, designed to encourage data suppliers to provide access for SOER. In practice, the impact of this legislation appears minimal. None of the countries without it reported major difficulties (the Netherlands observed the need for a budget to cover situations where extra work is needed to prepare information for SOER). Of the countries that have such legal provisions, Hungary noted that there was still a need for funding to cover the work. In the Slovak Republic, the measures work well in the MoE, but less satisfactorily in other institutions.

Table 23. Legislative measures applying to the provision of data for SOER

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Legal requirement to use official information sources?	No	No	No	Yes	No	No	No	No	No
Legal requirement for data suppliers to provide access for SOER?	No	No	Yes	Yes	Yes	No	No	Yes	No

Almost every country shows a strong commitment to improve SOER. Formal legal requirements to do this are the exception, but the UK Environment Agency has a requirement, written into its Management Plan, to encourage the formation of partnerships and consultative mechanisms, while the EPA, in Ireland, has a formal responsibility to address gaps in environmental data and research needs and will shortly introduce an accreditation scheme for data quality control. The general response was to recognise the importance of all the issues identified in Table 24, and to deal with them as resources permit. In Hungary and in the Czech and Slovak Republics, the growing importance of the Internet for information dissemination was explicitly recognised.

Table 24. Legislative commitment to improved methods of SOER

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Extended range of SOE products	(Yes)		(Yes)	Yes			Yes		
Data harmonisation	Yes		(Yes)	Yes	Yes		Yes		
Identification of data gaps and research needs	Yes			Yes	Yes		Yes	Yes	
Formation of partnerships and consultative mechanisms	(Yes)		(Yes)	Yes	Yes		Yes		Yes
New dissemination procedures	Yes		(Yes)	Yes	Yes		Yes	Yes	

In about half the countries consulted, the SOER body is subject to periodic audit of its activities, in terms of its efficiency, effectiveness, impact and relevance to the needs of its users (see Table 25). In most cases, this is not a review specifically directed at SOER, but forms part of a wider audit of the overall activities of the SOER body. In the UK and the Netherlands, the SOER parent body conducts performance reviews in addition to those required by government. Many of the countries where there is no formal audit nevertheless conduct *ad hoc* evaluation studies and collect feedback from users.

Table 25. Periodic audit of SOER activities

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Internal audit						Yes			Yes
Government audit		Yes*			Yes†	Yes	Yes†		Yes†
None	Yes		Yes	Yes				Yes	

*Part of wider audit of activities of SOER body

6.2.4. Requirements for consultation and collaboration

In about half the countries we considered, there is a legal requirement that SOER should include consultation with government ministries or agencies outwith the SOER body (see Table 26). The measures vary from general rules for quality control, applicable to any governmental publication (Hungary), to specific provisions listed in the Terms of Reference for SOER (Netherlands). Sometimes, (Hungary, Netherlands) the specification requires independent scientific or expert review. Even in countries where there is no legal requirement, consultation is carried out as good practice. Ireland and the UK each established cross-sectoral steering committees (National Environmental Data Committee in Ireland, and Inter-Agency Forum in the UK), although neither body has any basis in law. Collaboration between Government Departments and Agencies in the execution of SOER is not generally subject to any legal requirement, although, in the Netherlands, the Terms of Reference for SOER specify that the report should strive for consensus and this is achieved through inter-Departmental collaboration. In Ireland and the UK, one of the objectives in setting up the Inter-Agency committees was to facilitate collaboration between agencies in the task of SOER. Irrespective of whether legislation requires it, cross-Departmental consultation or collaboration is the usual practice in almost every country.

Table 26. Statutory measures for consultation over SOER

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Statutory requirement for consultation with other government departments and agencies									
Text circulated for comment		Yes		Yes		Yes			
Separate expert review				Yes		Yes			
Inter-Agency Steering Group	Yes								
Inter-Agency Editorial Board	Yes								
Statutory requirement for collaboration between the Government Departments and Agencies who contribute to SOER									
	No	No	No	No	No	Yes	No	No	No
Informal collaboration between Government Departments and Agencies to achieve cross-sectoral balance in SOER									
	Yes	No	Yes	Yes	Yes		Yes	Yes	Yes

6.2.5. Links to SOER at sub-national and supra-national levels

In all countries but three, there is a requirement for SOER to be undertaken both at regional and national levels (Table 27). Denmark has no need for sub-national assessment; in Ireland, some SOE reports are produced locally, independent of the national SOE report; the EPA draws on these local studies, when available.

The response from the Czech Republic interpreted 'regional' as supra-national, so is not comparable with replies from the other countries.

Various measures have been adopted to ensure consistency between SOER at different administrative levels. In France, the Netherlands and the UK, there are direct links between data collected regionally and nationally. The Netherlands, in 1997, published a regional Milieubalans report, using the structure of the national Milieubalans to present information from the 11 Dutch provinces. In the UK, SOE reports on the Internet are presented regionally to satisfy the Government's commitment to devolution. These reports describe regions defined by river catchments, rather than by administrative units. Sampling is local and data are then aggregated regionally and nationally, to avoid replication of information at the different levels. Consistency between the component countries is ensured through the Inter-Agency Forum.

Every country but Denmark and Hungary indicated that some effort was expended to achieve consistency in SOER with reports published in neighbouring countries. The Czech Republic noted coordination of certain monitoring activities with Germany and Poland (e.g. Danube, Elbe and the Black Triangle). There is no systematic harmonisation of SOE Reports but occasional analysis and review of the respective publications is undertaken to ensure consistency. The Netherlands cooperates with Flemish reporting bodies; this is facilitated by adoption of a common structure (from the Dutch reports) in the two countries. Ireland and the UK liaise in the preparation of SOE reports, particularly with regard to cross-border issues involving the Irish Republic and Northern Ireland. Norway noted the importance of the Nordic Council in encouraging consistency between Scandinavian countries in SOER.

A number of responses identified the significance of wider international coordination of SOER, including the EEA Expert Group, OECD, the UN and EUROSTAT. The OECD core set of environmental indicators and the DPSIR framework were singled out as important unifying tools.

Table 27. Regional and international collaboration over SOER

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Requirement to provide information for SOER at regional (sub-national) level	?	No	Yes	Yes	No[2]	Yes	Yes	Yes	Yes
Coordination of SOER with neighbouring countries	Yes	No	Yes[1]	No	Yes	Yes	Yes	Yes	Yes[1]

[1] Through the EEA Expert Group

[2] lthough some reports are produced by local bodies.

6.3. SOE Reports as part of the policy process

6.3.1. Links to Policy

In every country except France, formal links exist between the SOER body and policy units in the MoE (Table 28). In the Czech and Slovak Republics, Hungary and Norway (MD), the SOER body is an integral part of government. In Ireland and Norway (SSB), the agency that undertakes SOER is responsible to a parent organisation in central government. In the case of EPA, in Ireland, its Director General and Directors are appointed by the Government. In Denmark and the UK, links are less formal. The department in the Danish Ministry of Environment with responsibility for environmental policy formulation has a seat in the editorial

group while, in the UK, there is a working relationship between EA and the MoE, formally covered by a Memorandum of Understanding.

Table 28. Formal links with government policy units

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
SOER body is an integral part of government	Yes			Yes			Yes	Yes	
Agency is subsidiary to MoE			Yes		Yes		Yes		
Formal arrangements for policy groups to be represented in SOER		Yes							Yes
No formal relationship						Yes			

The level of involvement of the SOER body in environmental policy planning is more variable (Table 29). In those countries where SOER is conducted from within government (Czech and Slovak Republics, Hungary, Norway (MD)), the contribution is substantial. For example, in Hungary, the National Environment Action Plan was elaborated under the lead of MoE while, in the Slovak Republic, the Slovak Environment Agency has inputs to all policy documents.
Elsewhere, the contribution of SOE reports to policy formulation is less direct. In Denmark, NERI comments on the content of the policy plan but is not directly involved in its writing. In Ireland, SOE reports are used as an information source to underpin policy plans and EPA may advise any Government Minister, but the Government Department is responsible for policy. In the Netherlands, RIVM provides advice to government, but is not heavily involved in policy, while, in the UK, the MoE has responsibility for national policy, but EA provides advice and has produced an environmental strategy for England and Wales. In France, IFEN was involved in policy development, but this idea was abandoned and the Institute now serves purely as information provider.

Table 29. Involvement of SOER body in policy planning

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Contribution to environmental policy planning (1 = not involved, 5 = heavily involved)	3 - 5	2	2 - 3	5	1	2	1[1] 5[2]	5	2 - 3
Contribution to strategic planning for future SOER	Yes	Yes	Yes	Yes	Yes	Yes	Yes[2]	Yes	Yes

[1]SSB, [2]MD (see Table 1)

In contrast, all SOER bodies are actively involved in strategic planning of the SOER process. The Slovak Environment Agency is the main source of methodological advice on SOER for the MoE. In Denmark, NERI, together with the other parts of the Ministry of Environment and Energy have responsibility for evaluating the SOER process and outputs, and also make recommendations for future SoE products.

6.3.2. Operational and research links

Every country indicated that the SOER body was involved in some capacity with operational environmental (usually monitoring) programmes (see Table 30). Although IFEN is not directly involved in monitoring, international agreements require that the Institute collaborates with monitoring organisations and informs them of changes to their procedures that may be considered necessary. Many of the SOER bodies are actively engaged in environmental monitoring. RIVM runs several monitoring programmes, while, in Hungary, the MoE manages schemes to monitor water quality, air quality and waste. The Irish EPA also prepares national monitoring programmes, although responsibility for implementing ambient

environmental monitoring lies with the local authorities. EPA also manages a number of laboratories used by the local authorities and itself undertakes more specialised monitoring.

None of these activities are perceived to lead to conflict of interest. In most cases, pragmatic management actions avoid potential problems but, in the UK, the national collaborative forum for environmental monitoring is an important vehicle to promote collaboration and to collectively improve monitoring.

Table 30. Involvement of SOER body in other environmental programmes

	CZ	DK	FR	HU	IR	NL	NO	SL	UK
Operational environmental programmes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Research activities in SOER or environmental indicators	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Funding situation (1 = none provided, 5 = ample funding)	-	2/3*	3/4*	3	3	2*	3	2*	5

* Quality of SOE reports is adversely affected by a lack of funding for R&D activities

Every country except the Czech Republic is engaged in research to address methods of environmental assessment. In four of the nine countries, funding was considered to be inadequate and the shortfall in funds was felt to compromise the quality of the published reports. In France, the main problem was felt to be a shortage of suitably qualified staff and in the UK, a lack of information was noted in certain areas, such as soils.

7. Critical summary

7.1. Integrated environmental assessment

Respondents were invited to comment on the most effective means of achieving a collective assessment of the state of the environment. The phrase 'collective assessment' is interpreted to mean an integrated assessment, involving *'the interdisciplinary process of identification, analysis and appraisal of all relevant natural and human processes and their interactions which determine the current and future states of environmental quality and resources'* (EEA, 1998).

There was little support for new legislation, save that RIVM suggested that it might be helpful to formalise the conditions under which data are accessed for purposes of environmental assessment. The MoE in Hungary considered that an appropriate budget should made be available to cover extra work of organisations providing inputs to SoER. In the Czech and Slovak Republics, the need was expressed for greater collaboration between the MoE and other ministries, departments and experts, including the national statistical offices, but that this is best achieved through agreement, rather than through legislation.

EPA, in Ireland, advocated the use of a common structure for SOER and singled out the EEA and the OECD integrated environmental assessment frameworks as being particularly promising tools for improving SOER in the future. IFEN stressed the importance of strong central coordinating group with the responsibility to define the content of the report and write the text, backed up by a network of experts, acting in an advisory capacity. Contracted authors were not recommended. Finally, NERI, in Denmark, emphasised the need for continuous reporting on the state of the environment, linking development in the societal sectors with environmental pressures and with the entire process open to public debate.

7.2. Effectiveness of current procedures

Almost every country consulted identified certain areas where current procedures could be improved, although six of the nine countries considered that they were generally efficient and effective. Eight specific areas for improvement were identified:

I) greater independence from government (Czech and Slovak Republics)
II) greater clarity in terms of reference of SOER body (Denmark and Hungary)
III) establish separate unit for SOER (Denmark)
IV) more resources for SOER (Denmark)
V) improve coordination between partners engaged in SOER (Norway)
VI) improve coordination of data supply and seek to fill gaps (France)
VII) rationalise SOER products (Norway)
VIII) increase harmonisation with EU and OECD practice (Hungary, Czech and Slovak Republics)

7.3. Benefits of harmonisation

All countries recognised that there are potential benefits of harmonisation between national SOER procedures. This could facilitate the upwards provision of data (e.g. from national SOER bodies to the EEA) and make inter-comparisons between different reports much easier. The benefits are greatest in relation to the

assessment of trans-frontier problems, such as global change and pollution. Most countries favoured the adoption of common guidelines, provided these are not too prescriptive. Checklists and a set of common definitions were identified as potentially useful tools.

8. Conclusions

All SOE reporting stems from a common set of activities and objectives, aimed at assessment of present states and future trends in environmental conditions. However, the forms that individual SOE reports take are highly variable, both within and between countries (see Section 4). Typical outputs vary from comprehensive published reviews, containing detailed analyses of cause, effect and outlook, to statistical compendia and compilations of environmental indicators, which may form a basic reference source for future assessment and appraisal. Nevertheless, it is clear that the primary output from most SOER is some form of technical reference document.

The purpose of this study was to examine current institutional and legal arrangements for SOER in selected European countries, to provide background information for the design of guidelines and common methodologies for SOER. Many relevant factors have been identified, and few of these are entirely independent from each other. The selection of nine countries considered in this study cannot be regarded as a statistically representative sample, but the information derived from the survey does provide evidence of several important links between the organisational and legal arrangements for SOER and observed practice.

Irrespective of the legal or institutional background, the main motivation for SOER is to provide advice to environmental policy-makers and to serve as an objective basis against which to assess the effectiveness of those policies. Other important reasons for carrying out SOER are to report back to elected representatives on the government's performance in achieving its environmental goals and to educate and inform the general public.

8.1. Institutional issues

The key institutional issue in relation to SOER is the relationship between the body responsible for carrying out the report and the arm of government charged with formulating and implementing environmental policy. Two basic models are in evidence across the nine countries considered in this study. In the first, SOER is conducted within an executive department of government, usually within the Ministry of Environment or its equivalent. In the second, the SOER body is an autonomous or semi-autonomous Agency. The respective advantages and disadvantages of the two models are summarised in Table 6. Conventionally, any audit body should be independent, in management terms, of the system on which it reports. From this perspective, the independent SOER agency is preferable. But there are advantages in maintaining close links between the SOER body and policy units, for example, to facilitate access to data and information and to ensure effective feedback into policy from the appraisal process.

Of all the institutional and legal factors considered in this study, these relationships between the SOER body and policy groups had the most far-reaching impacts upon SOER practice and on the perceptions of the experts we consulted concerning the success of current reporting procedures and the need for change. When the SOER body is located in a government department, it is more likely that:

- Civil servants or administrators are employed to write the report (Table 14)

- SOER is undertaken in response to a formal statutory requirement (Table 21)
- Government may exercise influence over editorial matters (Table 18)
- Legislation may require the review of aspects of SOER methodology (Table 24)
- The SOER body is involved in environmental policy planning (Table 29)

When the SOER body is located in an autonomous agency, it is more likely that:

- The SOER report is written by scientific experts or a full-time team of SOER specialists (Table 14)
- The editorial team is free of government influence (Table 18)
- The SOER process is subject to periodic audit (Table 25)

Many of the SOER groups located within government expressed a wish for greater independence and appeared to recognise more readily the benefits of increased harmonisation with international practice in SOER (Section 7.2).
Those groups with greater independence from government were more strongly aware of the disadvantages of a prescriptive approach to SOER and of the need to respond to particular national priorities (Section 7.3).

8.2. Legislative issues

The main factor here is the extent to which there is a formal legislative basis for SOER (Table 21). To a large degree, this is correlated with the institutional issues discussed in Section 8.1 above. In practice, there are few instances where the existence of either legislation or formal terms of reference can be shown to have unambiguous consequences for SOER practice. Legislation addressing the provision of data for national environmental assessment is a case in point. In four of the nine countries consulted, there is a legal requirement for data providers to give access to information for SOER (Table 23), yet three of those countries indicated that access to data remained problematic (Table 17). Only two of the five countries without such legislation identified similar problems. Similarly, the existence, or otherwise, of legislation requiring consultation and collaboration with external bodies appeared to make little difference to the actual practice. It is likely that the main consequence of legislation is to add credibility to governments' commitment to the process of SOER (UNEP/DEIA, 1996).

8.3. Methodological issues

The two key differences in methodological approach concerned: i) the choice of authors (independent experts vs. civil servants / administrators vs. SOER specialists (Table14) and ii) the degree of structural guidance provided by the SOER body (Table 15). There was no clear relationship between these two facets of SOER design. Both countries where authorship was vested in administrators provided their authors with detailed guidelines, but there was no clear trend among the much larger group of countries where the writing was done by scientific experts.

Almost all countries claimed to exercise high levels of quality control (Table 17) and the extent of editorial intervention (Table 18) appeared to be unrelated to either authorship or the level of structure imposed on the writers. There is an interesting inverse relationship apparent between the level of guidance provided to authors (Table 15) and the extent to which the SOER body itself manipulates raw data to compute environmental indicators (Table 17). Countries that provide

only sparse guidelines (Hungary, UK) appear to be heavily involved in the derivation of indicators, while those countries that provide detailed structural guidance for authors (Czech and Slovak Republics, Denmark, Netherlands) appear to undertake comparatively little data processing within the SOER body. This may suggest that the guidelines include instructions for computing appropriate indicators. Equally, the correlation may be an artefact of what is, after all, a very sparse data set.

The critical comments presented in Section 7 are instructive, in relation both to perceived shortcomings in current methods and to future directions. There is growing support for the wider adoption of a more structured framework for environmental assessment. Several countries commented favourably on the emerging standards for integrated environmental assessment within the EEA and in OECD. There was also mention of the need for wider adoption of a set of standard environmental indicators, such as are already in use in the UK and (to a lesser extent) in Ireland.

There is some disillusion with the performance of contracted specialists as authors of SOE report chapters, particularly in France, where this has been the approach hitherto. There is widespread support for strengthening of the specialist SOER function and for increased independence of such bodies from policy units in central government.

Problems regarding data availability were, predictably, widespread. There are two broad issues here: firstly, gaps in the coverage of key datasets needed to undertake a proper appraisal of all the factors that contribute to a given environmental situation, and, secondly, problems in accessing data that are available, because of the cost of purchase or leasing the data or because of issues of intellectual property. Both issues are properly in the domain of national governments. The only way to address a shortfall in environmental data is to increase the resources committed to national survey and monitoring programmes, while problems of data ownership may be solved either by increasing the budget for data acquisition or by introducing appropriate legislation.

Finally, and of relevance to the institutional arrangements between the European Environmental Agency and its member countries, most countries recognised the benefits of greater international harmonisation and inter-comparability of SOER. However, there was a strong and unanimous reluctance to become committed to the adoption of procedures that are too prescriptive and too inflexible. The overwhelming preference was to apply the principle of subsidiarity. **'Most environmental issues relate to specific national situations'** (Denmark). **'Use of strict guidelines is inefficient: European reports should take into account more than the national SOER alone, and should select the best indicators from individual countries'** (France). **'Different countries requires a different focus and each country needs to achieve the right balance in its SOE reports'** (Ireland). **'Different countries have different approaches for different needs, and harmonisation across Europe would not necessarily be helpful. It would be much more useful to draw out what constitutes 'best practice'. This would be a mixture of things taken from the different member states that could be put together at the European level to help everyone. A prescriptive set of guidelines would stifle innovation and remove flexibility for countries with different types of environmental problem'** (UK).

9. References

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Annex 1: Summary of questionnaire returns: Bosnia-Herzegovina; Estonia; Former Yugoslavian Republic of Macedonia; Lithuania

Table 1. SOE publications in the countries surveyed

	BH	ES	LI	FYROM
Periodic Comprehensive Assessment	BH01 (every 2 years)	ES01 (annual) ES02 (every 2 years)	LI01 (every 5 years)	FYROMO1 (annual)

Key: BH01 State of the Environment Report
ES01 Estonian Environment
ES02 Estonian Environmental Monitoring
LI01 Lithuania's Environment: Status, Processes, Trends
FYROM01 Annual State of the Environment Report

Table 2. Primary purpose of main national SOE report

	BH	ES	LI
Main SOE Report is response to statutory requirement or a working reference. Score 1 - 5, where 1 indicates the former and 5 the latter.	1	3	
Main SOE Report published as brochure or technical document. Score 1 - 5, where 1 indicates the former and 5 the latter.	5	2	1

Table 3. Principal audience for national published SOE reports (1 = most important; 6 = least important)

	BH	ES	LI
1	Policy	Policy	Public
2	Public	Politicians	Science
3	Politicians	Public	Policy
4	Science	Science	Politicians
5	Funding bodies	Private	Private
6	Private	Funding Bodies	Funding bodies

Policy = Policy Makers; Private = Private Sector; Funding Bodies = Research funding bodies

Table 4. SOE reports as education tools

	BH	ES	LI
Public education is a primary aim of SOE reporting	Yes	No	Yes
Additional material produced specially for the education sector	Yes	No	

Table 5. Institutional background to the organisation primarily responsible for national SOER

BH	ES	LI	FYROM
Ministry	Agency	Ministry	Ministry

Table 6. Primary sources of information for SOER

	BH	ES	LI
(i) Government statistics	Y	Y	Y
(ii) Government datasets		Y	Y
(iii) Data collected for SOER	Y	Y	Y
(iv) Data held by authors	Y		Y
(v) International Data Centres	Y		

(i) Government statistics
(ii) Data sets held by Government-funded research organisations
(iii) Organisations with a responsibility for collecting and providing SOE data
(iv) Data held by the expert authors
(v) International data centres

Table 7. Data access, processing and quality control

	BH	ES	LI
Data access problematic? (1=No, 2=Sometimes, 3=Often)	2	1	1
Manipulation of data by SOER body, e.g. to generate useful environmental indicators (1 for no processing)	1	5	3
Quality control: (1 = None, 5 = exhaustive)	1	3	3
Consistency checks against other datasets? (1 = None, 5 = exhaustive)	1	3	3

Table 8. Editing of the report

	BH	ES	LI
Extent of editorial intervention (1 = minor copy editing, 5=substantive changes)	1	1	1

Table 9. Review and consultation

	BH	ES	LI
Review and comment:	Yes	Yes	No
Policy makers		Yes	
National scientific / technical experts		Yes	
Authors		Yes	
Consultation of Stakeholders:	Yes	Yes	Yes
A final consultation immediately prior to publication:	No	No	Yes
Final responsibility for contents and pesentation:			
Reviewers			Yes
SOER body		*	
Ministry of Environment	Yes		

* Editorial Board

Table 10. Legislative basis for SOER in European countries

	BH	ES	LI
Is SOER based on a statutory requirement?	**Yes**	**No**	**Yes**
National SOER model			
Existing government department	Yes	Yes	
Independent agency at arm's length			Yes

Table 11. Legislative measures applying to the provision of data for SOER

	BH	ES	LI
Legal requirement to use official information sources?	No	Yes	No
Legal requirement for data suppliers to provide access for SOER?	Yes	No	Yes

Table 12. Regional and international collaboration over SOER

	BH	ES	LI
Requirement to provide information for SOER at regional (sub-national) level	Yes	No	Yes
Coordination of SOER with neighbouring countries		Yes	Yes

Table 13. Formal links with government policy units

	BH	ES	LI
SOER body is an integral part of government	Yes	Yes	
Agency is subsidiary to MoE			Yes
Formal arrangements for policy groups to be represented in SOER		Yes	

Table 14. Involvement of SOER body in other environmental activities

	BH	*ES*	*LI*
Contribution to environmental policy planning (1 = not involved, 5 = heavily involved)	5	3	3
Contribution to strategic planning for future SOER	Yes	Yes	Yes
Operational environmental programmes	Yes	Yes	No