European Environment Agency

TECHNICAL SPECIFICATIONS

Organisational support for the production of the 2000 edition of the EEA indicator report

EEA Project Manager: Peter Bosch

1. Introduction

1.1 Background

According to the European Environment Agency Regulation (1210/90/EEC) the European Environment Agency is required to provide objective, reliable, and comparable information on the state of the environment. One of the vehicles to communicate this information are State of the Environment reports, of which the Agency has published until now four[1]. These reports are intended to support strategic environmental planning, and are linked to important steps in EU (or European) policy processes.

In addition, the EEA is developing a regular indicator-based report, which is intended to become the tool for making regular environmental performance reviews. Such a report will be an outlet for the most aggregated data coming out of the EIONET[2] (the European Environmental Observation and Information Network linked to the EEA). The report will not only be a collection of selected environmental statistics fact sheets, but will include an assessment of the developments using the DPSIR framework[3] for the analysis. To emphasise this difference, the term "indicator-based report" is used here.

In 1997, a Feasibility study on the production of a yearly indicator-based report was made. Based on this study the first edition of the indicator-based report is being compiled during 1999 (see annex 5 for the list of contents of the 1999 report). According to the planning the report will be ready by the beginning of December and it will be available in print around February/March 2000.
Already starting from December 1999 onwards, a discussion will be organised by the EEA to evaluate the concept and contents of the first edition of the report, and to decide on the form of the continuation of the series. A number of discussion points that have been discussed before making the first edition will be visited again. This includes questions like: what should be the frequency of the report (each quarter of the year as

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1 These are: (i) *Europe's Environment: the Dobris Assessment* (1995); (ii) *Environment in the European Union 1995*, report for the review of the Fifth Environmental Action Programme (1995); (iii) *Europe's Environment: The Second Assessment* (1998); and (iv) *Environment in the European Union at the Turn of the Century* (1999).

2 See our homepage for more details on the organisation of the EEA and the European Information and Observation Network (EIONET) http://www.eea.eu.int.

3 DPSIR (*Driving Force - Pressure - State - Impact - Response)* framework for environmental reporting and assessment.

a newsletter, or every year, or every two years as a more integrated report); what should be the focus of the report (regular repetition of a number of indicators; or more essay type chapters on topics of special policy attention); what should be the balance between contributions by ETCs and by others, what will be the geographical coverage of the report (EU, EEA countries, or also including the accession countries), and the choice between a printed publication and an Internet product. In addition, a discussion on specific indicators as published in 1999 can be foreseen: how can they be improved in terms of data and presentation, are alternative indicators more useful?
External developments, like the development of sectoral environment reporting mechanisms by the European Commission, Eurostat and the EEA, such as the transport and environment reporting mechanism, and discussions on, so called, headline indicators as proposed for the UK, will also influence the discussions and the contents of the future editions of the report.

Based on the outcome of these discussions, the contents and the working procedure for the 2000 edition needs to be elaborated. Experiences from the 1999 process already indicate that much more effort is needed to prepare in detail the definition of the indicators, and to include guidelines for the data to be used for the indicators and other (table) presentations in the report. Also the organisational set-up may be changed, which might lead to, for instance, a more direct involvement of other organisations such as Eurostat.

On the technical side, a so-called Data Warehouse has been installed at the EEA, which has been used to store and disseminate statistics for contributors to the 1999 edition of the indicator report. During the process shortcomings have been detected that will be worked on in the coming years. At the same time the Data Warehouse will be streamlined and extended with procedures for regular data capturing from a variety of sources to serve regular EEA reporting. For a number of the possible indicators it should by the beginning of 2000 be possible to use the warehouse for generating directly the data tables needed for the indicators.

Based on the contents and the inventory of data flows needed for the 2000 edition of the indicator based report, the various contributors need to be organised, briefed and supplied with all support material they need. Most of the support material developed for the 1999 edition can probably be re-used. The compilation and editing process is characterised by a very intensive exchange of E-mails and other contacts to make sure that all material is delivered on the deadlines in the required format and quality.

1.2 Organisation

General information on the organisation of the EEA and the EIONET can be found on the homepage of the EEA[4]. Main players in the development of the yearly indicator report are the European Topic Centres (ETCs), as providers of the indicators and assessments for the chapters covering environmental issues or problems, and the National Focal Points of the EEA who form the link to the national systems and are keen on ensuring consistency with indicator developments in their countries. Main clients, such as the services of the European Commission and the European

[4] http://www.eea.eu.int

Parliament, play an important permanent consultation role in the development of this report, which ensures that it becomes an effective tool for policy-makers.

The European Topic Centres (ETCs) will have the responsibility for providing the data and the draft text of various chapters. They are also responsible for developing (missing) indicators in their fields and preparing their databases for regular data deliveries to the EEA. The EEA develops the concept of the report, organises the whole process and is responsible for the consistency and contents of the final result.

2. Purpose and contents of the contract

The aim of the contract is to provide technical and organisational support to the EEA in developing the 2000 edition of the regular indicator-based report. The following tasks are included:

a) **support the evaluation process of the first edition by summarising comments received, elaborating proposals for alternative set-ups of the report, and reporting on discussions with stakeholders;**

The EEA will organise a discussion firstly on the basis of a pre-print of the 1999-indicator report, later with a wider circle of stakeholders on the basis of the printed report. The discussion will focus on the result achieved in 1999 and the way to go forward. Discussions will probably be based on written reactions gathered from the National Focal Points, the EEA Scientific Committee, the EEA Management Board and others involved. These reactions need to be processed into concise overviews highlighting the various opinions and positions, that can serve as discussion documents. The discussions might give rise to various models for the 2000-report that should be elaborated and thought through to feed into a final discussion in which a decision on the 2000-edition will be taken. The consultants will need to support the various steps. It is estimated that these activities would amount to around 15 working days.

a) **support to the development of the list of contents and list of indicators for the 2000 edition, including the analysis of data and information required;**

The development of the content list of the 2000-report need to be more elaborated than was done for the 1999 edition (annex 5). In addition to a list of indicators more specificity will be needed on the required data sets, the required inputs from various institutions, the relation of the indicator with other indicator lists around and the way of presentation of the indicators and the statistics in the report. Also an analysis is needed of any supporting material, such as case study boxes and their data needs. Based on the experiences in the 1999 report this can be elaborated in considerable detail. The consultant will need to support the process by developing the various lists and overviews.

c) **preparation of "indicator fact sheets" - compilation, documentation and interpretation of specific socio-economic and environmental indicators required for the report, not covered by existing activities or by the themes of the European Topic Centres;**

Indicator Fact Sheets are an important tool in developing the report and documenting the indicators (see Annex 6). Indicator Fact Sheets are documents of about 4 pages per indicator containing a diagram and tables with background data for the indicator, meta information on the data, text on the environmental and policy relevance of the indicator and an assessment text explaining the development shown in the indicator. The task of the consultant is to compile the indicator fact sheets for the non-ETC data mainly concerning socio-economic developments, using the information contained in the EEA data warehouse (most of which will be accessible via the Internet). In the few cases for which the Data Warehouse does not as yet contain any data, the consultant will have to gather data from databases of international organisations, directed by EEA staff. As a selection of the general socio-economic data is also being used to produce efficiency indicators, extra attention needs to be given to a proper description and analysis of the developments in these basic indicators. Depending on the decision on the scope of the 2000-edition this work can partly (or maybe even to a large extent) build on the indicator fact sheets developed during 1999 (see also point 7 below on the offer for rates for developing fact sheets).
The experience in 1999 was that completion of one fact sheet from scratch, including processing of comments and revisions, required 5 working days.

d) **co-ordination of the compilation process - to assist in the daily contacts with the European Topic Centres and other consultants responsible for the delivery of data and drafts of chapters;**

The preparation of the report will be a process involving approx. 20-25 persons in a number of European Topic Centres, in other consultancy firms and in-house EEA staff, working on data delivery or as writers of sections. The task of the consultant will be to support the co-ordination of the activities of all these contributors, with regard to the timely delivery of material and the delivery in the right form and format. The work will consist of developing and keeping time schedules, facilitating exchange of data and other materials, checking completeness and consistency of the contributions, and ensuring a proper delivery to the EEA.

e) **organisation of a review process - to provide support in the organisation of a review of the results by the member countries and other parts of the EEA network.**

The precise procedure and timetable of the production of the 2000 report have not yet been fixed. Nevertheless, it is clear that at some moment the current EEA member countries[5], and depending on the geographical scope of the 2000 report also other countries in Central and Eastern Europe, and other parts of the EIONET network of collaborating institutes and organisations need to review the data and the outcomes. A suitable point in the process is probably after the completion of the indicator fact sheets. The review is planned to be supported by Internet technology to exchange files. The consultant shall support the organisation of this process (organising files and comments) including processing the comments.

Location of work

[5] Member States of the European Union + Norway, Iceland and Liechtenstein.

The work can be executed from the contractor's offices, with regular contacts with the EEA Project Manager responsible for the project and regular visits to the EEA. At some moment a prolonged stay of about a week might be necessary to support the finalisation of drafts in direct co-operation with the project manager.

Time schedule

The work should begin within three weeks of signing the contract and be executed in discussion with the respective Project Manager over a period of eleven months.

3. Reports and documents to be submitted

The consultant should submit the following reports:

- The material developed on the basis of the evaluation: summarising comments and reactions and elaborating alternative set-ups of the report
- Guidelines specifying data to be used and data flows.
- The fact sheets for all socio-economic indicators and environmental indicators not covered by the ETCs.

All reports should be made available to the Agency in 5 paper copies (simple format) and on floppy disk (preferably in Word or WordPerfect). Guidelines for design of eventual Web material will be given to the contractor.

4. Payment

- 30% within 60 days of signing of the contract;
- 40% within 60 days of acceptance of draft report;
- the balance within 60 days of acceptance.

5. In drawing up the bid, the tenderer should bear in mind the provisions of the **standard contract** attached to this invitation to tender (Annex I).

6. The tender must include:

- all the information and documents required by the authorising department for the appraisal of tender, on the basis of the selection criteria set out in point 9 and the award criteria in point 10;
- the price in accordance with point 7.

7. Prices

Prices must be quoted in Euro using the conversion rates published in the C series of the Official Journal of the European Communities valid on the day the notice of invitation to tender was published.

Tenderers must note that:

- prices must be fixed amounts;
- estimated travel and subsistence expenses must be indicated separately.

The estimate of costs should be based on Annexes I/III/IV of these specifications and include any travel required to meet representatives of the Agency. In any event it should include the maximum amount of travel and subsistence expenses payable for the services provided. (Travel and subsistence expenses will not be taken into account when deciding who to award the contract to.)
NOTE: Due to a number of uncertainties regarding size and scope of the 2000-report tenderers should provide apart from a total estimate, an offer for:
-extra man-days for the organisational support;
-preparation of additional fact sheets from scratch.

8. Tenders from **consortiums** of firms or groups of service providers, contractors or suppliers must specify the role, qualifications and experience of each member or group.

9. Selection criteria

Tenderers must provide evidence of their professional and technical qualifications by means of the following documentation:

- an identification sheet (name or business name, legal status, contact person, etc.). Please use Annex IV;
- where applicable, references of the inscription in the VAT-register;
- where applicable, references of the inscription in the trade register;
- a statement of experience/expertise (particularly at European level) plus CVs of key personnel;
- information of the key personnel's working languages and those in which they are able to submit reports;
- a work plan showing the time schedule and the expected number of weeks of effort;
- a breakdown of expected costs.

10. Contract awarding criteria

A contract will be awarded to the tenderer whose offer is the most advantageous taking into account:

- experience in compiling reports on the state of the environment
- knowledge of environment statistics and indicators
- experience in organising consultations on the European level
- experience in executing data research
- ability to communicate with experts from various disciplines
- understanding of the aims and formula of the EEA regular indicator based report, as appearing from the work plan
- practicality of the work plan proposed
- proven track record in timely delivery of high-quality work in similar areas
- price and quality.

Encl.

Annex 1: Standard service contract form
Annex 2: Identification sheet
Annex 3: General terms and conditions applicable to contracts awarded by the EEA
Annex 4: Reimbursement of travel expenses
Annex 5: List of contents of the 1999 EEA indicator report
Annex 6: Indicator Fact Sheet model

SERVICE CONTRACT

CONTRACT REF No. XXXX/BXXXX.EEA.XXXX

The European Environment Agency, hereinafter called “the Agency”, which, for the purposes of the signature of this contract is represented by Mr. Domingo JIMENEZ-BELTRAN, Executive Director of the Agency

on the one part

and

whose official address is:

VAT Nr :

represented by

hereinafter referred to as "the contractor"

of the other part

have agreed as follows :

Article 1 - Subject

In the framework of this contract, the contractor hereby undertakes, subject to the conditions laid down in this contract and the annexes thereto, which form an integral part thereof, to perform the following tasks :

•

The programme of work is set out in Annex I which, with the other annexes, forms an integral part of the contract.

Article 2 - Duration

This contract will take effect from the date of signature and will end months after the date of signature of the contract.

The task entrusted to the contractor shall be completed at the latest months after the date of signature of this contract.

Article 3 - Financial dispositions

1. In consideration of the services performed under this contract, the Agency shall pay to the contractor a maximum amount of **ECU** , **VAT xxcluded**.

   It is agreed that the said amount shall cover all expenditure incurred by the contractor in the performance of this contract, including a maximum amount of **ECU** for travelling expenses.

Article 4 - Payment conditions

1. In derogation from article 10, paragraph 2 of the General Conditions applicable to contracts awarded by the European Environment Agency, this amount will be paid as follows:

FEES	**ECU**
ECU	payable within 60 days after presentation of an invoice, following the signature of the contract **(30%)**.
ECU	payable within 60 days after presentation of an invoice, and acceptance by the Agency of the 1st Interim report **(40%)**.
ECU	payable within 60 days after presentation of an invoice, and acceptance by the Agency of the Final report **(30%)**.

TRAVEL EXPENSES[6] **ECU**	**ECU (MAXIMUM)** payable within 60 days after presentation of one or several invoices with all supporting documents. • Reimbursements will be made in accordance with Annex IV of this contract(Reimbursement of travelling expenses). • Invoices for travelling expenses must be issued at the latest within two months after the expenses were incurred.

2. Payments shall be made within 60 days of receipt of the invoice and shall be deemed to have been made on the date on which they are debited to the Agency's account. All payments will be done upon presentation of an invoice.

   The Agency may, however, after giving notice to the Contractor, defer payment if the services covered by the request for payment are contested by the Agency or if the vouchers in support of the invoice are incomplete. Where payment is so deferred, the Agency shall not be liable to pay interest or indemnities of any kind.

   All requests for payment and any complaints shall be sent to the following address :

   The European Environment Agency
   To the attention of: The Budget and Finance Department
   Kongens Nytorv 6
   DK - 1050 Copenhagen

   The Agency shall be bound to comply with payment periods only if requests for payment are presented at the above address.

3. The payments shall be made to account no.

   in the name of

   with

   bank identification code (BIC code):

[6] *Only applicable if travel expenses have been incurred*

Article 5 - General conditions and applicable law

1. This contract shall be governed by the General terms and conditions applicable to contracts awarded by the European Environment Agency as laid down in Annex III to this contract, which the contractor hereby declares to have read and agreed to.

2. This contract shall be subject to Danish law.

3. The Agency and such persons whom are authorised for this purpose by the Executive Director shall be entitled to carry out audits and controls, have access to all books, documents, papers, records and files kept by the Contractor relating to expenditure incurred in performing the contract during the contractual period and for a period of five years after such period.

Article 6 - Non-performance or delayed performance

1. Of any of the obligations arising from this contract, and regardless of the consequences provided for under the law applicable thereto, the beneficiary shall forthwith inform the Agency, with the relevant details, of any event that is liable to prejudice or delay the performance of this contract. The parties concerned shall agree together on the measures to be taken.

2. If no agreement can be reached concerning the delayed performance or/and the non-performance by the beneficiary the Agency may automatically terminate the contract without recourse to any legal proceedings, where no action is taken by the beneficiary within one month of receiving formal notice by registered letter.

3. Furthermore, without prejudice to such termination, the Agency may require reimbursement of all or a part of the amounts paid, having regard to the nature and the scale of the work carried out, before the date of termination of the contract, as well as the interest incurred on overdue payments at the rate in force on the exchange market in the country of the beneficiary or failing that, in Denmark, for three month's deposits in ecus, starting the day when the amounts to be reimbursed were received by the beneficiary. The amount due shall be notified to the contractor by registered mail and reimbursed to the Agency within two months of the notification, failing which the rate of interest on the amounts to be reimbursed shall be raised by 2 % points.

Article 7 - Jurisdiction

Any dispute between the Agency and the contractor or any claim by one party against the other under this contract which cannot be settled by the contracting parties out of court, shall be brought before the Copenhagen courts.

Article 8 - Administrative provisions

1. Any amendment to this contract, the annexes thereto or the general terms and conditions applicable to contracts awarded by the European Environment Agency shall be the subject to a supplementary written agreement on the same terms as the contract; a verbal agreement shall not be binding on the contracting parties.

2. The reference number indicated on the first page of this contract as well as the subject of the contract mentioned in article 1 must be mentioned in all relevant reports. For all letters and financial documents with reference to the performance of this contract, only the reference number is compulsory.

3. Any communication with reference to the performance of this contract shall be in written form and shall be sent to the following address :

   For the Agency:

   EUROPEAN ENVIRONMENT AGENCY

   For administrative and financial matters to the attention of :

   The Budget and the Finance Department

   For technical aspects only, to the attention of :

   Kongens Nytorv 6
   DK - 1050 Copenhagen K

   For the contractor, to the attention of :

Article 9 - Tax

1. The Agency shall, in respect of its financial interest in the contract, be exempt from duties, levies and taxes, including value added tax, pursuant to Article 3 and 4 of the Protocol on the Privileges and Immunities of the European Communities and to the Headquarters Agreement between the European Environment Agency and the Government of Denmark of 17 August 1995.

2. The contractor **is/is not** subject to VAT The VAT number of the contractor is XXX.

3. The VAT number of the European Environment Agency is: **DK 18 13 98 39.**

   For the purposes of the application of Article 3 and 4 of the said Protocol, the Contractor shall comply with instructions of the Agency.

Article 10 - Annexes

1. The following are annexes to this contract:

   Annex I Technical annex

   Annex II Reports and documents

   Annex III General terms and conditions applicable to contracts awarded by the European Environment Agency.

   Annex IV Reimbursement of travelling expenses[7]

   Annex V VAT exemption form

2. In case of conflict between dispositions of the annexes and those of the contract, dispositions of the contract will prevail.

Done at Copenhagen on
in three copies, in the English language.

For the contractor: For the Agency:

D. JIMENEZ-BELTRAN
Executive Director

[7] *Only applicable if travel expenses have been incurred*

ANNEX II

INFORMATION REQUIRED FOR CONSULTING TASKS (per task)

Reference number: _____

Company name: _____

Address: _____

_____

Telephone/fax:_____

Director: _____

Consultant(s): _____

VAT N°: _____

Bank details (address, account no and BIC code: _____

_____

Stamp and signature:

_____

GENERAL TERMS & CONDITIONS APPLICABLE TO CONTRACTS AWARDED BY THE EUROPEAN ENVIRONMENT AGENCY

Article 1 - Performance of the contract

(1) The contract shall be performed in such a way as to exclude the possibility of the Contractor or his staff supplying services under conditions identical to those governing the supply of services by a member of the European Environment Agency's staff. The Contractor and his staff may not be members of the European Environment Agency's staff.

Article 2 - Secondary obligations of the Contractors

(1) The Contractor to the European Environment Agency undertakes to perform the tasks assigned to him according to the highest professional standards. In performance of the contract, the Contractor is required, depending on the circumstances, to use only his own highly qualified, professional staff.

(2) The Contractor to the European Environment Agency undertakes to provide the Agency with any information it may request for the management of the contract. If the Contractor is a natural person, he shall be required to provide proof of his status either as a self-employed person or an employee for the duration of the contract. To this end, he shall provide the Agency with information about his occupation.

(3) In the event of termination of the contract for one of the reasons referred to in Article 7 of these terms and conditions, the Contractor to the European Environment Agency shall undertake to send the Agency all information and documents in his possession on the tasks assigned to him.

Article 3 - Confidentiality

(1) The Contractor undertakes not to make use of and not to divulge to third parties any facts, information, knowledge, documents or other matters communicated to him or brought to his attention during the performance of the contract or any matter arising therefrom. He shall continue to be bound by this undertaking after the expiry of the contract.

(2) If the Contractor uses his own staff in the performance of the contract, he shall obtain from each staff member a written undertaking that they will respect the confidentiality of any information brought to their attention during the performance of the work and that they will not divulge to third parties or use for their own benefit or that of any third party any document or information not available publicly, even after completion of their assignment. A copy of the undertaking shall be sent to the European Environment Agency.

Article 4 - Permits and licences

(1) The Contractor shall be solely responsible for taking the necessary steps to obtain any permit or licence required for the performance of the contract under the laws and regulations in force at the place where the tasks assigned to the Contractor are to be performed.

(2) The European Environment Agency may terminate the contract without notice if the Contractor is unable, through his own fault, to obtain any permit or licence required for the performance of the contract.

Article 5 - Spread of risk

(1) The Contractor shall not be entitled to payment if he is prevented by force majeure from performing the tasks assigned to him. Part performance only of any such task shall result in part payment. Provided it is specified in the contract, the above provisions shall not affect the Contractor's entitlement to reimbursement of travel and subsistence expenses and of costs for the shipment of equipment incurred in the performance of the contract.

Article 6 - Liability of the contracting parties

(1) The European Environment Agency may not under any circumstances or for any reason whatsoever be held liable for damage sustained by the Contractor himself or by his staff during the performance of the contract. The European Environment Agency shall not accept any claim for compensation or repairs in respect of such damage.

(2) Except in case of force majeure, the Contractor shall be required to indemnify the European Environment Agency for any damage they may sustain during the performance, poor or otherwise, of the contract.

Article 7 - Termination of contract

(1) Each contracting party may, of his own volition and without being required to pay compensation, terminate the contract by serving formal notice two months in advance. If the contract is terminated by the European Environment Agency, the Contractor shall be entitled to payment for the part performance of the contract only.

(2) In the event of a serious failure by the Contractor to the European Environment Agency, duly noted by the European Environment Agency, to fulfil his obligations under the contract, the contract may be terminated at any time by registered letter without formal notice or payment of any compensation whatsoever by the European Environment Agency. This provision shall not affect the application of Article 6(2) of these General Terms & Conditions.

Article 8 - Termination of the contract and services to third parties

(1) The Contractor to the European Environment Agency shall not, without the prior and explicit approval of the European Environment Agency, assign the rights and obligations arising out of the contract in whole or in part or sub-contract any part of the contract to third parties.

(2) Even where the European Environment Agency authorises the Contractor to sub-contract part or all of the work to third parties, he shall nonetheless remain bound by his obligations to the European Environment Agency under the contract.

(3) Save where the European Environment Agency expressly authorises an exception, the Contractor shall be required to include in any sub-contracts for all or part of the work such provisions as enable the European Environment Agency to enjoy the same rights and guarantees in relation to the sub-contractors as it enjoys in relation to the Contractor himself.

Article 9 - Ownership

(1) Any result or patent obtained by the Contractor in the performance of the contract shall belong to the European Environment Agency which may use them as it sees fit.

(2) Copyright and any other rights of ownership in respect of manuscripts or parts thereof shall belong exclusively to the European Environment Agency except where copyright or other property rights already exist.

(3) On the date of acceptance of the manuscripts and subject solely to the exception referred to in paragraph (2) above, all rights in respect of manuscripts, including amongst others the right to use, print, publish and sell all or part thereof in any manner and in any language whatsoever, shall be acquired by the European Environment Agency which may transfer all or part of such rights to third parties on its own terms.

(4) The Contractor shall specify any parts of manuscripts, including illustrations, maps and graphs, in which copyright or any other right of ownership already exists and hereby affirms that he has obtained permission to use such parts from the titular holder(s) of such rights or from his or their legal representatives. Any cost for which the Contractor may become liable for such permission shall be paid by him. Save as otherwise provided for in paragraph (2), the Contractor hereby affirms that he is entitled to transfer the copyright or other rights of ownership in respect of the subject matter of the manuscript.

(5) The European Environment Agency shall not be required to publish manuscripts or documents supplied in the performance of the contract. If it is decided not to publish the manuscripts or documents supplied, the Contractor shall not have them published elsewhere without the written approval of the European Environment Agency.

Article 10 - Methods of payment

(1) Payments shall be made in ECU.

(2) At the request of the Contractor, the Agency may pay him an advance equal to 30% of the amount due on completion of the contract. In addition to the requirement of the second paragraph of Article 45 of the Financial Regulation applicable to the Budget of the European Environment Agency, payment of the advance may be made conditional upon the furnishing by the Contractor of proof that he has lodged a deposit equal to the amount of the advance. The advance shall be deducted from subsequent payments in such a manner that it is fully recovered on exhaustion of the funds provided for such payments.

(3) In the event of termination of the contract under Article 7 of these General Terms & Conditions, no payment shall be due except for services actually rendered up to the date of termination. In such an event, the amount due shall be calculated after deducting any payments already made. If the payments made prior to termination exceed the sum finally due, the additional amount shall be repaid by the Contractor to the European Environment Agency within 60 days of receipt of a request for repayment. If payment is not made within this period, the sum owed by the Contractor shall start to bear interest at the ECU rate applied by the European Monetary Co-operation Fund on the last day of the period allowed for repayment, as published in the C series of the Official Journal.

(4) Reimbursable travel and subsistence expenses shall be paid, where appropriate, on production of supporting documents including receipts, used tickets and boarding pass.

(5) Payments shall be made within 60 days of the due date.

(6) The Contractor, whose registered office or place of abode shall be situated within the territory of one of the Member States of the European Environment Agency, shall be required to name a bank within the territory of his country of domicile for the payment of the sums due to him under the contract.

Article 11 - Provisions relating to taxation

(1) If the tax laws to which he is subject require the Contractor to pay VAT on fees received under the contract, the amount of VAT shall be included in the sums paid by the Environment Agency in return for services rendered.

(2) The Contractor shall be responsible for complying with the national tax laws applicable to him in respect of revenue received under the contract with the European Environment Agency.

(3) Tax laws:

For Belgium
Direct exemption for transactions of 5.000 Bfr or more. The invoices shall be marked "*Exemption from VAT, Article 42, Paragraph 3.3 of the Code, Circular No. 2/1978".*

For the Grand Duchy of Luxembourg
Services rendered in the Grand Duchy of Luxembourg for 10.000 Flux or more for official purposes of the European Environment Agency shall be granted exemption from Value Added Tax. The invoices shall be marked *"Articles 8 and 9 of the Regulation of the Grand Duchy of 19 December 1969, Article 47 of the law of 5 August 1969 (Recueil de Législation A - No. 66 of 24 December 1969)".*

For the Netherlands
Services rendered in the Netherlands for official purposes of the European Environment Agency shall be zero rated (cf. *Resolution of 14 March 1969 No. 69/1649 - Wet op de Omzetbelasting 1968).*

For Italy
Services rendered in Italy for 100.000 Lires or more inclusive of tax for official purposes of the European Environment Agency shall benefit from direct exemption. The invoices shall be marked "*Decrees of the President of the Republic No. 687 of 23 December 1974 - Italian Official Journal No. 338 of 28 December 1974 - and No. 288 of 2 July 1975 - Italian Official Journal No. 183 of 11 July 1975".*

For France
Services as referred to in Article 259B of the "Code général des Impôts" rendered outside France for official purposes of the European Environment Agency shall be granted exemption from Value Added Tax (note of the "*Ministère de l'Economie et des Finances of 29 July 1980, Official Bulletin - Direction Générale des Impôts, note No. 201 of 18 November 1980").*

For the other Member States
If the Contractor is required, under the fiscal laws to which he is subject, to pay VAT on the sums paid under this contract, the amount of the tax shall be included in the sum referred to in Article 4 of the contract.

The contractor shall, at the request of the European Environment Agency, make available to the latter all vouchers which it might require in order, where necessary, to apply for reimbursement by the fiscal authorities of levies and taxes which have been paid in execution of this contract, pursuant to Articles 3 and 4 of the Protocol on the Privileges and Immunities of the European Communities.

Article 12 - Amendments or additions to the contract

(1) The provisions of the contract and the annexes thereto may be amended or supplemented only by means of an additional agreement signed by each of the parties or their authorised representatives.

REIMBURSEMENT OF TRAVEL EXPENSES

The reimbursement of travel & 'per diem' expenses occasioned by a convocation of a Contractor to the European Environment Agency is paid in ECU at the rate of exchange in force against the ECU for the month in which the liquidation is effected (rate from Infor ECU of the European Commission). All accounts must be in the currency in which they were paid.

a) Travel expenses

by train:	First class fare (used ticket with claim),
by air:	Economy class where available (used ticket with claim),
by car:	The equivalent of 23 ECU per 100 kilometre.

b) Transfer of professional materials or non-accompanied luggage

Subject to prior approval by the Agency.

c) Daily allowance

The daily allowance payable shall be based on the mission allowances for Officials of the European Environment Agency in grades A4 to A8 and B multiplied by the number of days and half-days on the mission. These allowances are subject to periodic revision and the rate applied will be that operating on the date of the mission.

This daily allowance is to include **all** expenses relating to:
- accommodation;
- meals;
- local transport including taxis.

NOTES:

Taxis are not chargeable.

For information only:

The current daily allowances (from 28/VII/91) are as follows (*)

Belgium	:	4.690 BFR	Denmark	:	6.120 BFR
France	:	4.300 BFR	Germany	:	4.225 BFR
Greece	:	2.880 BFR	Ireland	:	5.235 BFR
Italy	:	5.615 BFR	Luxembourg	:	4.435 BFR
Netherlands	:	4.955 BFR	Portugal	:	4.150 BFR
Spain	:	5.230 BFR	United Kingdom	:	5.755 BFR

(*) Rates are decreased with 25% when the mission exceeds 4 weeks.

EEA 1999 Yearly Indicator Report

Introduction

The EEA yearly indicator-based report fills the gap between the three to five yearly integrated assessments the EEA produces on the environment in Europe. While the three to five-yearly integrated assessment reports provide a comprehensive insight in the current *and* future development of the environment, to be used as background for strategic policy development, the indicator report is essentially a tool to make decision-makers accountable for the results of their policies.

That indicates that the main target group of the indicator-based report is defined as policy-makers at the European Commission and in the Member States, as they can be found at Commission services and at national ministries, but equally important are all those otherwise engaged in environmental policies, such as members of the (European) parliament, NGOs and supporting bodies such as universities and consultants.

The report is an 'indicator-based' report in the sense that it is not a collection of diagrams or fact sheets, but a collection of concise assessments based on the information presented in the indicators. Each of the chapters will contain a conclusion on the character of the progress made.

The envisaged size of the report is 50 to 60 pages. The geographical coverage is the 18 EEA countries. The indicators cover the timespan 1980 to 1998 or the last decade, depending on relevance and data-availability. The assessment focuses on the last years.

Criteria for the selection of indicators in the EEA 1999 Yearly Indicator-based Report

- The indicators should answer or should come close to answering a policy question that is central on current policies in the EEA 18 area (for many issues, these will be EU policies).
- Where quantitative targets for policy achievements have been set, the variables in the indicators have been chosen according to the targets and both are presented together, allowing for a distance to target analyses.
- In any case, the indicators should show a development over time. Only where current data is available for the beginning of an important time series only, a snapshot can be presented.
- Depending on the policy question, the indicator can consist of a single variable (a single line in a diagram) or be split up in component parts (like the contribution of sectors to a total emission) or consist of different variables to show an assumed relationship (e.g. oil price, energy use, CO_2 emissions, CO_2 concentrations and average temperature). Variables are selected according to the need of the assessment.
- Neither full coverage of the DPSIR chain, nor focusing on a specific type of indicator is a criterion for the selection as providing the proper answer to policy questions is considered more important than following a framework

◊ As most of the policy questions concern the development of driving forces and pressures, which is where the main levers for environmental policy are, the selection of indicators shows a bias towards the D and the P in the DPSIR framework.

◊ State and Impact indicators form part of the 'story in the background', explaining why policies are developed and are more prominently present in the EEA's comprehensive state of the environment reports. In a few cases, State indicators are included in the selection for the yearly indicator-based report, where policies are explicitly aimed at State and targets for concentrations or other 'State' variables have been formulated. A few impact indicators have been included where these play a role in the policy debate and where it is significant to show a change over time.

◊ Response indicators are generally scarce due to lack of statistics. This is reflected in the selection although it has been tried in each chapter to include indicators answering part of the question 'And what has been done; with what effect?'

- As the EEA indicator report is intended as an outlet for main outcomes of the EIONET (the European Environmental Information and Observation Network), the selection of chapters (and thus of a number of indicators) is influenced by the current capabilities of the EIONET, including all national contributing centres.

In addition, the following practical criteria were applied:

- comparable data should be available for a large part of the EEA countries, if not for all of them;
- a comparable time series should be available;
- no extra data collection should be necessary, as the data needed for the indicators should form part of the ongoing data collection of the European Topic Centres.

Finally, the general OECD criteria for indicator selection also apply for this report.
(OECD, 1993):

Policy relevance and utility for users An environmental indicator should: • provide a **representative picture** of environmental conditions, pressures on the environment or society's responses; • be simple, **easy to interpret** and able to show **trends over time**; • be **responsive to changes** in the environment and related human activities; • provide a basis for **international comparisons**; • be either **national in scope** or applicable to regional environmental issues of national significance; • have a threshold or reference value against which to compare it so that users are able to assess the significance of the values associated with it.
Analytical soundness An environmental indicator should: • be theoretically **well founded** in technical and scientific terms; • be based on international standards and **international consensus** about its validity; • lend itself to being linked to economic models, forecasting and information systems.
Measurability The data required to support the indicator should be: • readily available or made available **at a reasonable cost/benefit** ratio; • adequately **documented** and of **known quality**; • **updated** at regular intervals in accordance with reliable procedures.

Presentation criteria relevant for the selection

- In the sectoral chapters, the contribution to various environmental problems is shown (in an overview to show the relative importance of each of the problems for the sector, and in a time series of the sectoral emissions/discharges/waste production.
- In the chapters on issues, the total emissions are presented, split up, if relevant, into sectoral contributions. This shows the development of sectoral contributions to the respective problem.

List of Contents 1999 Yearly Indicator Report

List of chapters

After each chapter the frequency is indicated. “Rotating” means that the chapter is part of one theme (like ‘nature and biodiversity’) that is covered by a series of topics (such as ‘wetlands’, ‘dry grasslands’, ‘forests’) of which each year one will be covered. For an tentative indication of possible contents lists of the next editions of the report see the document ‘list of contents next editions’ included below.

Sectors/Driving forces
1a Agriculture (yearly)
1b Industry (yearly)
1c Energy (yearly)
1d Transport (yearly)

Issues
2. Climate change (yearly)
3. Stratospheric ozone depletion (bi-annually?)
4. Local and transboundary air pollution (yearly)
5. Waste (yearly, with slightly changing topics)
6. Water quantity (rotating)
7. Eutrophication (rotating)
8. Wetlands (rotating)
9. Integrated Coastal Zone Management (rotating)

Horizontal responses and integration tools
10. Environmental taxes (rotating)

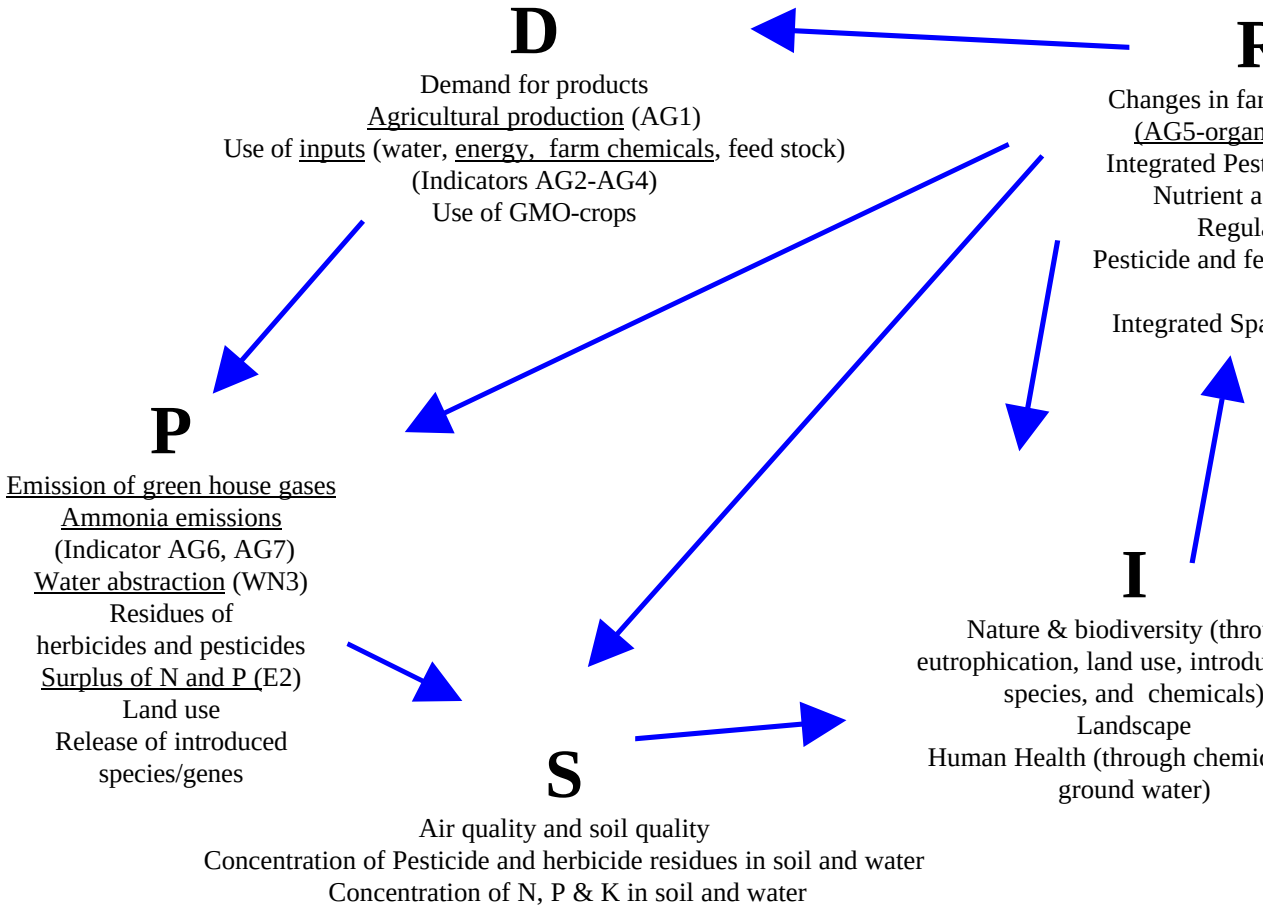
Once only chapters:
11. Total Material Requirement of the European Union (once only. As financial procedures have taken a long time it is uncertain if this essay can be included in the 99 edition)

Detailed list of indicators

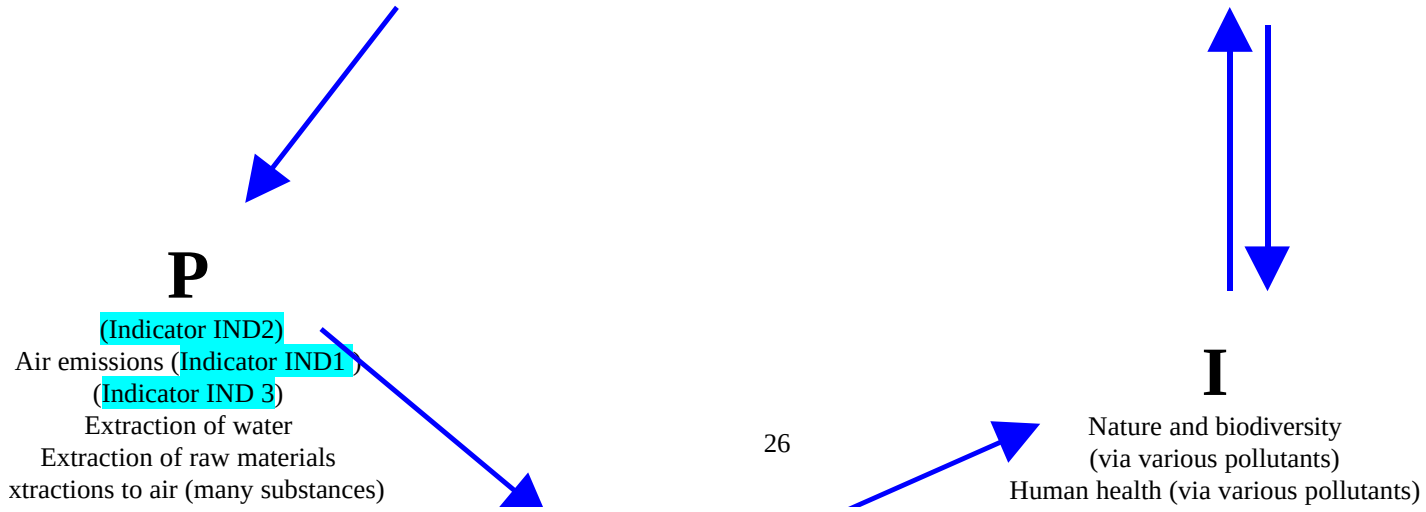
The list of contents of the first edition of the EEA yearly indicator report is organised according to main policy questions for each of the environmental issues or societal sectors. Next to each policy question an indicator is given that comes close to giving an appropriate answer. The philosophy behind starting with a list of policy questions in making a list of indicators, is the idea that it is easier and more straightforward for users to comment on policy questions and to identify main and secondary questions in relation to the use of the indicator set. The selection of main questions has been done for a target group of high level policy makers and parliamentarians.
The two columns at the right hand side characterise the indicators by comparing with the DPSIR (Driving forces - Pressures - State - Impact - Response) framework and the EEA typology of indicators. (A= straightforward indicators portraying a development in a variable; B = performance indicators linking A type information with targets; C= efficiency indicators, linking Pressures with Driving forces).
The DPSIR diagrams presented with each chapter aim to situate the selected indicators in the process chain and they should clarify on which aspects have been included in the selection of indicators and which not. Underlined variables are included in the 1999 indicator report, with a reference number that returns on the following page.

Chapter 1: sectoral developments

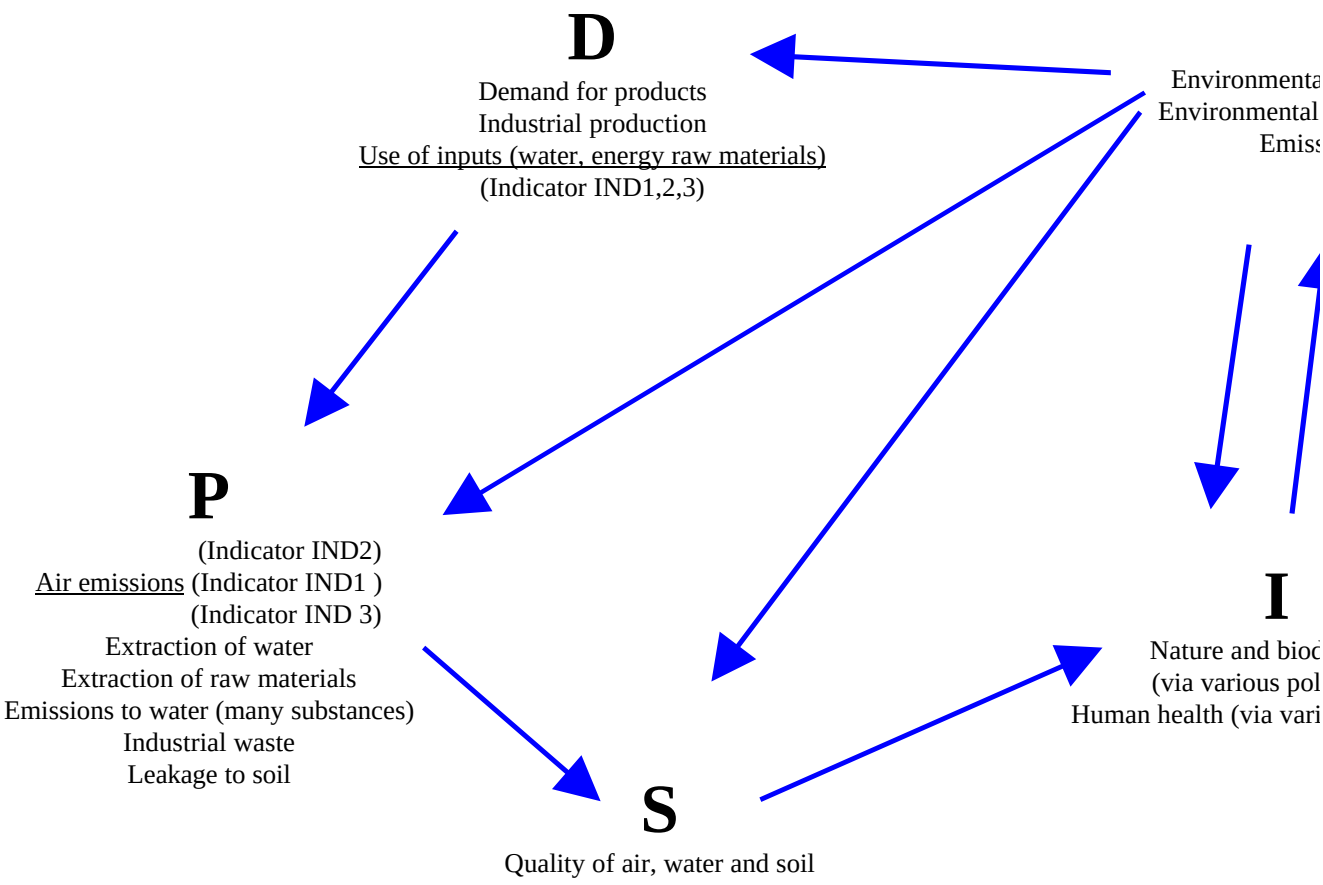
SECTORS: AGRICULTURE



Ref	Issue/Question	Indicator	Notes anc
AG	AGRICULTURE		
AG7	How much does the agriculture sector contribute to environmental problems?	Share of the agriculture sector in total emissions of NH_3, CO_2, CH_4, and N_2O, share in final energy consumption in 1996.	environm sector.
AG1	What have been the developments in environmentally relevant aspects of agriculture? a) with regard to eutrophication	Number of livestock (cattle, pigs, sheeps+goats) per area (1980-1997)	
AG2		Consumption of fertilisers per area of agric. Land (1980-1997)	
AG3	b) with regard to water stress	Irrigated land, as % of agric. area (1980-1997)	
AG4		Consumption of pesticides (active ingredients per area) (1980-1997)	
AG5	c) with regard to less burdening farming systems	Area with organic farming as % of total agricultural area (1985-1997)	positive i
AG6	Has the agriculture sector been successful in becoming more environmentally efficient?	Agricultural environmental efficiency	CH_4, CO_2 emissions pesticide agricultu 1996/7).



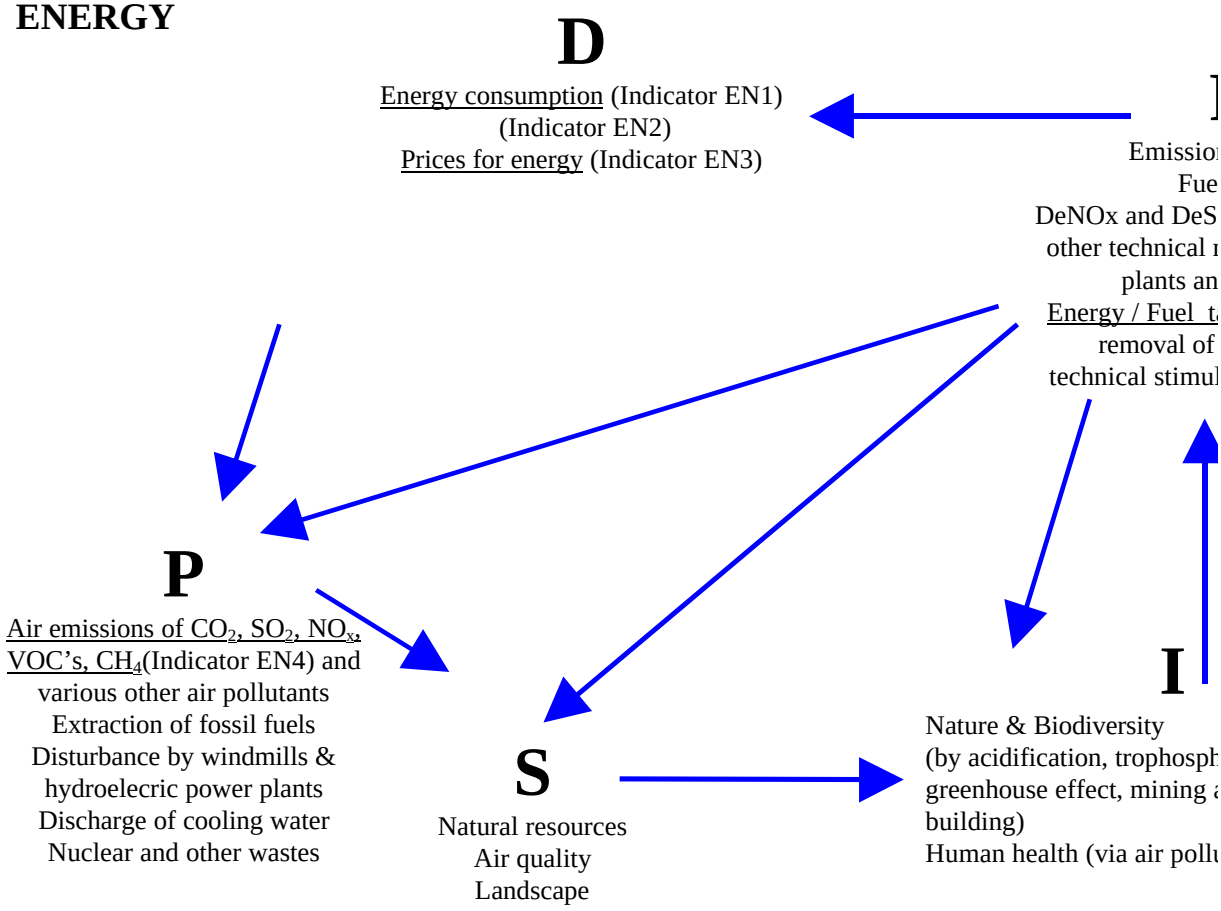
SECTORS: INDUSTRY



Ref	Issue/Question	Indicator	Notes anc
	INDUSTRY		
IND2	How much does the industry sector contribute to environmental problems?	Environmental profile of the industry sector.	Share of t in total er SO_2, NO_x ideally w energy us
IND1	Has the industry sector been successful in becoming more environmentally efficient?	Industrial environmental efficiency	CO_2, SO_2 final ener versus the productio
IND3	Which branches in industry require special attention ?	emissions of CO2,SO2,NOx, for selection of industry branches,	Data fron project. T

		1993.	data (for countries years) wi informati Included complete

SECTORS:
ENERGY



Sectors: Energy

Ref	Issue/Question	Indicator	Notes anc
	ENERGY		
EN1	Have we been successful in reducing the total use of energy?	Total primary energy supply versus GDP, EEA-18 (1980-1996)	
EN2	Is the share of renewables increasing?	Total primary energy supply, EEA-18 (1980-1996)	Try a pre the share Inland Cc as an area subdiagra share of r maybe als subdiagra The share linked wi
EN3	Are prices and Taxes developing in a direction that stimulates more efficiency of energy use?	Prices and Taxes for fuels and electricity in industry, in transport, for households, EU15 (1990-1997)	Combine EN6
EN4	How much does the energy sector (s.s.) contribute to environmental problems?	Energy sector environmental profile	
EN5	Has the energy sector (s.s) been successful in becoming more environmentally efficient?	Energy sector's environmental efficiency	GHG emi EEA-18 e 1996; anc NOX, NM of the ene

SECTORS: TRANSPORT

D

Production patterns/structures
Work and settlement patterns
No. of households
Disposable income
Leisure activities
Market price of transport
resulting in **passenger** and **freight transport**.
With a modal split (TR2)
energy use (TR1)

Regulation (e
movement re
Taxes, road p
Investmen
"Sm
Technical
Fuel qu

P

Emission of CO2, NOx, CO VOCs and particulates (Indicator TR4 and 5)
noise
land take
material use for infrastructure
wastes
Various diffuse emissions (wear and tear of tyres and road surface, crash barrier corrosion)
Vehicle wrecks, oil waste and ship cleaning waste.

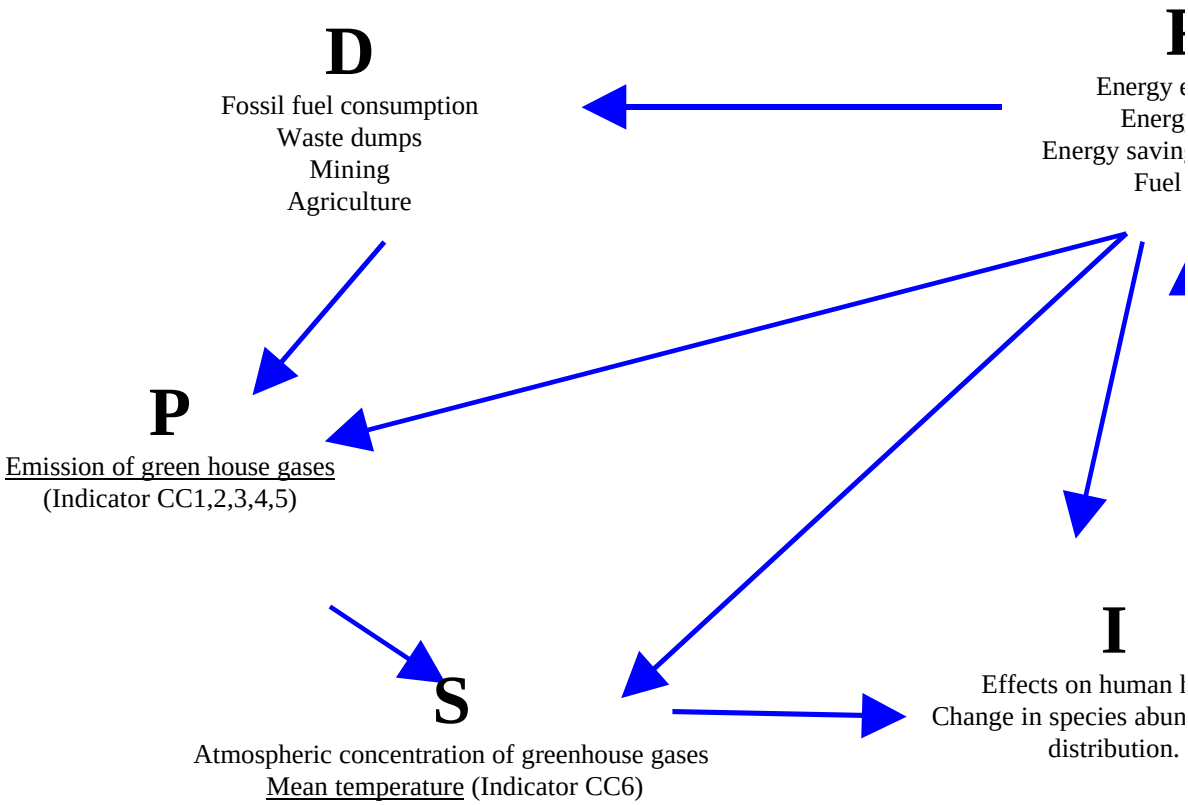
S

Air , water and soil quality
Noise levels and exposures

Ill health (e.g. acci
especially in ch
Biod

Ref	Issue/Question	Indicator	Notes and
	TRANSPORT		
TR5	How much does the transport sector contribute to environmental problems?	Environmental profile of the transport sector.	Share of t in total er CO_2, SO PM10 and consumpt indicators suggested lead, CO.
TR4	Has the transport sector been successful in becoming more environmentally efficient?	Transport environmental efficiency	CO_2, CO, emissions vehicle k transport transport, TERM in ind.), to b future wi
TR1	What is the final result of improving fuel efficiency in transport?	Transport Energy efficiency	TERM in assessme technical volume d
TR2	Has the modal split developed towards more environmentally friendly modes?	Transport by mode -passenger km by mode -bicycle transport -freight transport by mode -passenger transport by air (in mln passengers)	TERM in TERM in Modes: P buses, tra rail, wate
TR3	Are fuel prices developing in a direction stimulating less use of road transport?	Fuel prices	TERM in feasible c
TR6	Are taxes on transport developing in a direction that stimulate less use of (road) transport?	Taxes on transport, as % of total taxes (1980-1996).	TERM in data.

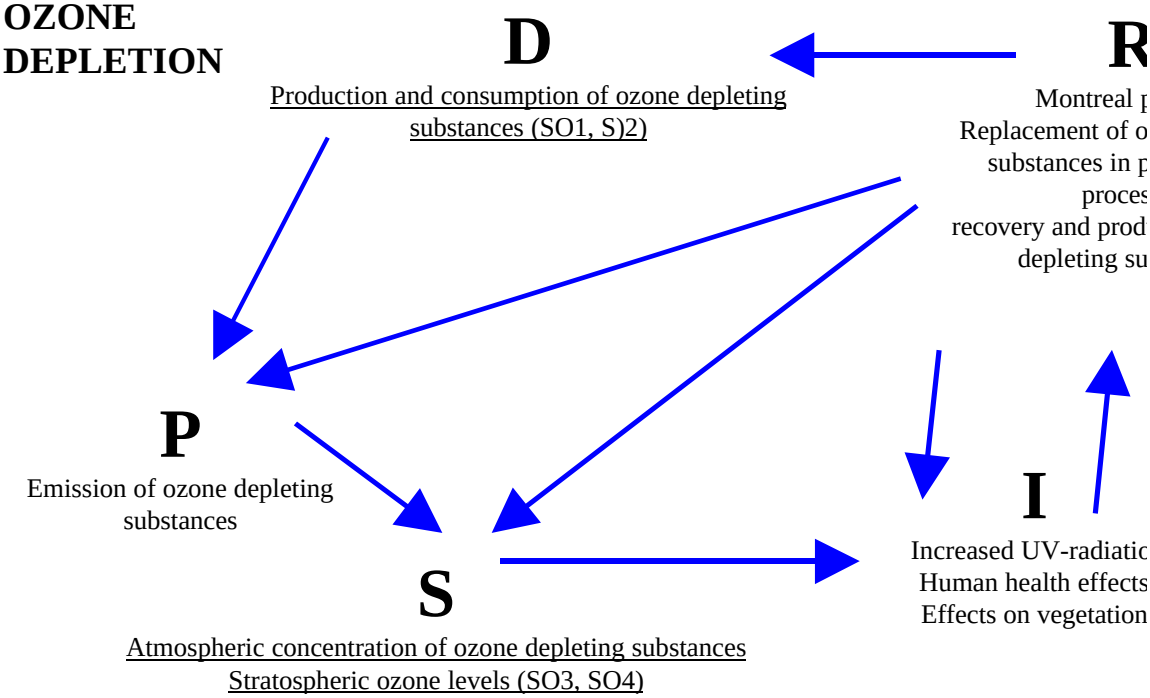
Chapter 2: Climate change



Climate change

	Issue/Question	Indicator	Notes and a
CC1	Are the CO2 targets (EC and UNFCCC) reached?	CO2 emissions, EU15 total and EEA 18; 1990-1996 against target level; sectoral split	
CC2	And how are the emissions other greenhouse gases developing?	CH4 emissons, EU15 and EEA 18 (1990-1996); sectoral split	
CC3	idem	N2O emissions, as for CC2	as for CC2
CC4	idem	emissions HFCs, PFCs and SF6, EU15 and EEA18	country per
CC5	Kyoto targets reached?	aggregated GHG emissions (in GWP for 3 gases) vs target (comparison with GDP development)	
CC6	How is the main (public) indicator of climate change - temperature - developing?	European average temp. (1900-1998)	consider fu EUMETNI some word precipitatic coverage, s glacier retr glacier retr good once- this can be

STRATOSPHERIC OZONE DEPLETION

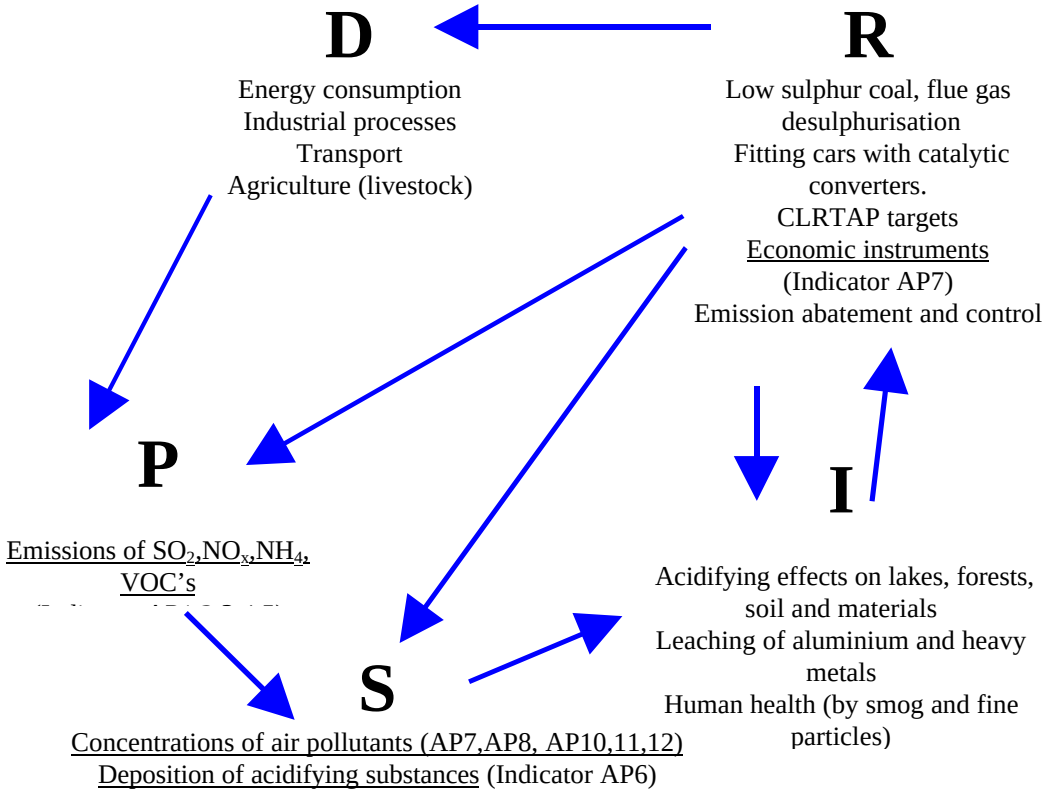


Chapter 3: Stratospheric Ozone Depletion

	Issue/Question	Indicator	Notes and assessmer
SO1	Policy issue: Ensuring that the developing countries meet the 1999 freeze on CFCs, the 2002 freeze on halons and future reductions. Discourage the use of HCFs as replacements for CFCs, halons and CTC. Gradually thighten HCFC controls. Prevent the increased use of methylbromide in developing countries. Promote its phase out.	Production of ozone-depleting substances in the EEA-18 (1989-1997)	
SO2	idem,	Sales of ozone-depleting substances in the EEA-18 (1989-1997)	
SO3	No policy question, indicator added for public interest.	Total potential tropospheric chlorine and bromine concentration (1978-2000)	
SO4	No policy question, indicator added for public interest. What is the progress towards replenishment?	Ozone column over Europe (1975-2000)	TOMS data, average latitudes 35-70N anc longitudes 11.2W-21
SO5		Interaction climate change – ozone depletion (1978-1998)	under consideration. indicator chapter 2 a

Note: no Impact indicator proposed because the impact assessments are not stable enough for an indicator.

Chapter 4: Local and transboundary air pollution

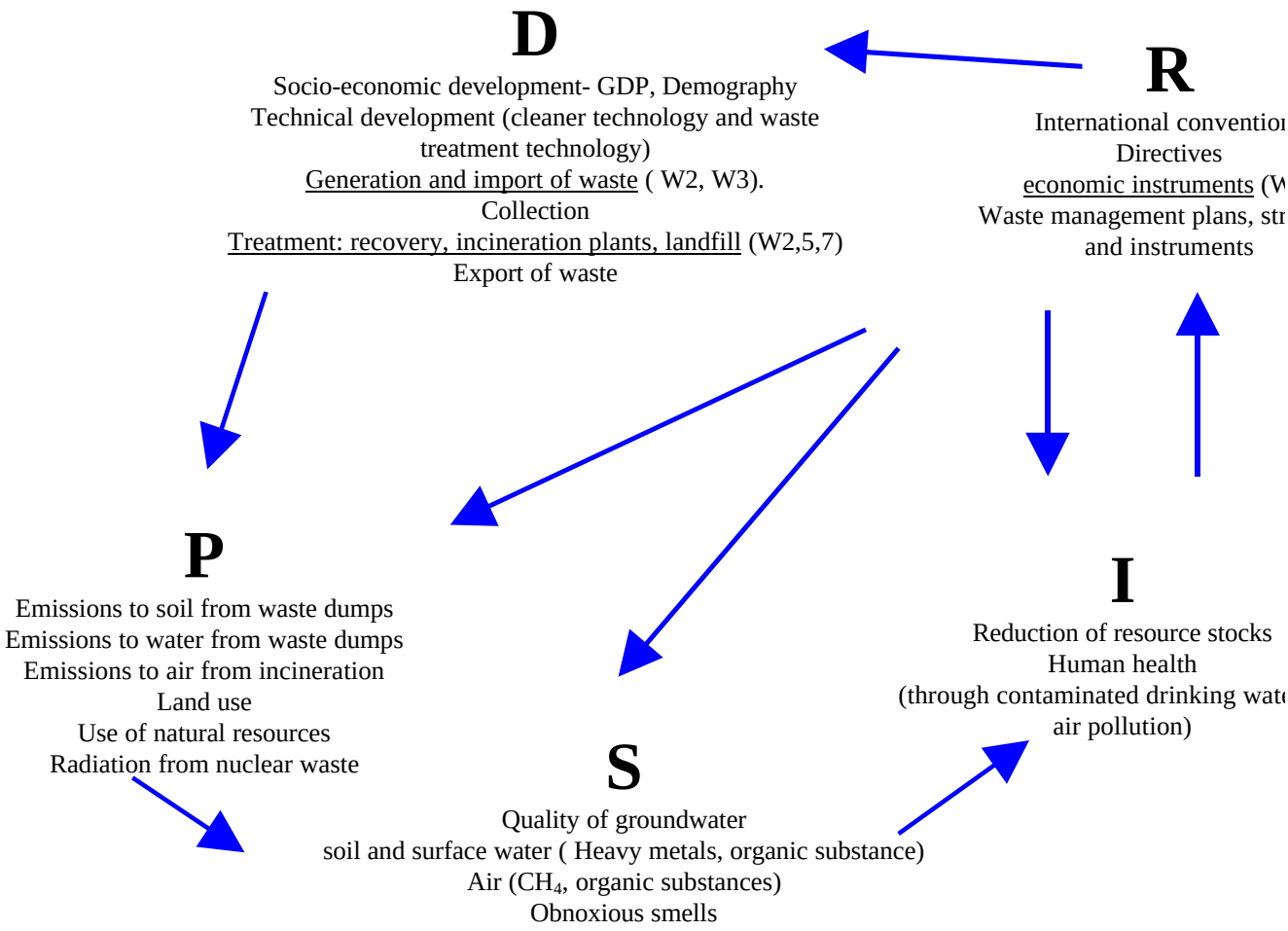


Chapter 4: Local and transboundary air pollution

	Issue/Question	Indicator	Notes and assessment
AP1	will emission reduction targets of the CLRTAP/national emission ceilings be reached?	Emission of SO2 by distance to CLRTAP/EC, sector split (1980-1996)	distance to target; prior for action; country com against national emissic ceilings
AP2	idem	Emission of NOx by distance to CLRTAP/EC, sector split (1980-1996)	see AP1
AP3a	idem	Emission of NH3 by distance to EC target, sector split (1980-1996)	see AP1
AP3b	Are acidifying emissions still de-coupled from economic development?	Emissions of acidifying substances, vs GDP (1980-1996)	
AP4	will emission reduction targets of the CLRTAP/national emission ceilings be reached?	Emission of NMVOC versus EC target, sector split (1980-1996)	see AP1
AP5a	How are other air pollutants not yet covered by targets developing?	Emissions of CO and CH4; sectoral split	no targets
AP5b	Are ozone precursor emissions being de-coupled from economic development?	Aggregate indicator of Nox, VOC, CO and CH4 next to GDP	
AP6	How far are we in protecting the environment against acid precipitation?	Area with exceedance of critical loads of acid. substances, 1987-96(7).	time series (maps could considered). Break in ti in 1997 due to change i NOT YET AVAILABL
AP7	How far are we in protecting the environment against the effects of photochemical substances? And what are the trends?	Vegetation exposed to AOT40	time series based on sta derived from the map (a could be considered) SKETCH ONLY
AP8	How far are we in protecting the European population against the effects of photochemical air pollution? And what are the trends?	Population exposured to AOT60 .	time series based on sta derived from the map (a could be considered) SKETCH ONLY
AP9	What have been the most successful instruments/measures in reducing emissions?	Response indicator under construction: the effect of various measures on emissions of SO2 vs reference scenario.	Indicator showing in a t a reference scenario of S emissions up to 1998 w measures, and in a seri the effect of (packages c measures. NOT YET AVAILABL
AP10	Are fine particles purely an urban problem, or is a larger share of the population exposed?	PM10 exceedance of proposed EC limit value	based on combination o modelling of secondary and rural measurements primary aerosols NOT YET AVAILABL
AP11	Are air quality guidelines being exceeded in urban areas; how often; and what is the population exposed to such exceedances?	Exceedances of AQ threshold values for SO2 in urban areas	Unit: number of exceed SKETCH ONLY
AP12	idem	Exceedances of AQ threshold values for PM10 in urban areas	Unit: number of exceed SKETCH ONLY
AP13	idem	Exceedances of AQ threshold values for	Unit: number of exceed

		NO2 in urban areas	SKETCH ONLY

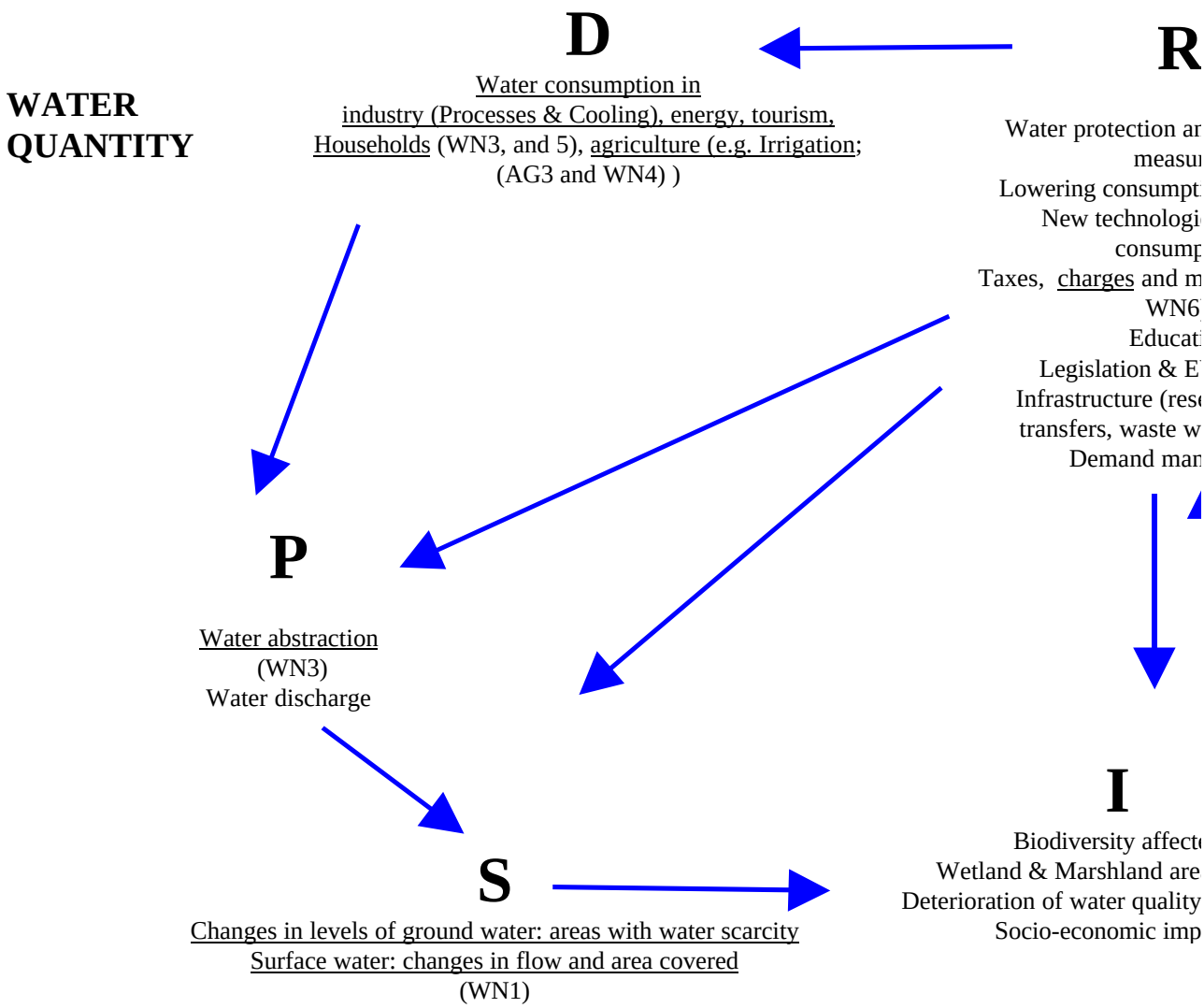
WASTE


D
Socio-economic development- GDP, Demography
Technical development (cleaner technology and waste treatment technology)
Generation and import of waste (W2, W3).
Collection
Treatment: recovery, incineration plants, landfill (W2,5,7)
Export of waste
R
International conventio
Directives
economic instruments (W
Waste management plans, str
and instruments
P
Emissions to soil from waste dumps
Emissions to water from waste dumps
Emissions to air from incineration
Land use
Use of natural resources
Radiation from nuclear waste
I
Reduction of resource stocks
Human health
(through contaminated drinking wat
air pollution)
S
Quality of groundwater
soil and surface water (Heavy metals, organic substance)
Air (CH_4, organic substances)
Obnoxious smells

Chapter 5 Waste

	generation		
W1	How much waste becomes available each year? (and what do we do with it?)	Total waste generation	depending OECD/Eur questionna country co
W2	How is the amount of household waste developing?	Development of the generation of waste: specific waste streams from households	as amounts waste are l some impo component waste will
W3	Is the amount of industrial waste being decoupled from the level of activity? (Is prevention of waste occurring?)	Development of the generation of waste: manufacturing waste versus index of industrial production	depending OECD/Eur questionna
	treatment		
W4	How much of biodegradable household waste is still ending up on waste dumps?	Landfill of biodegradable waste on municipal landfills.	
W5	How is the recycling of packaging waste developing?	Treatment of packaging waste	
W6	How is the re-use/recycling of construction and demolition waste developing?	Treatment of construction and demolition waste	
W7	Where does sludge from waste water treatment installations end up?	Destination and treatment of sewage sludge (1984-1996)	categories: agriculture incineratio
W8	Are taxes being used to correct the negative signal given by relatively lower prices for landfilling?	Taxes on landfilling (use of taxes, and tax levels)	

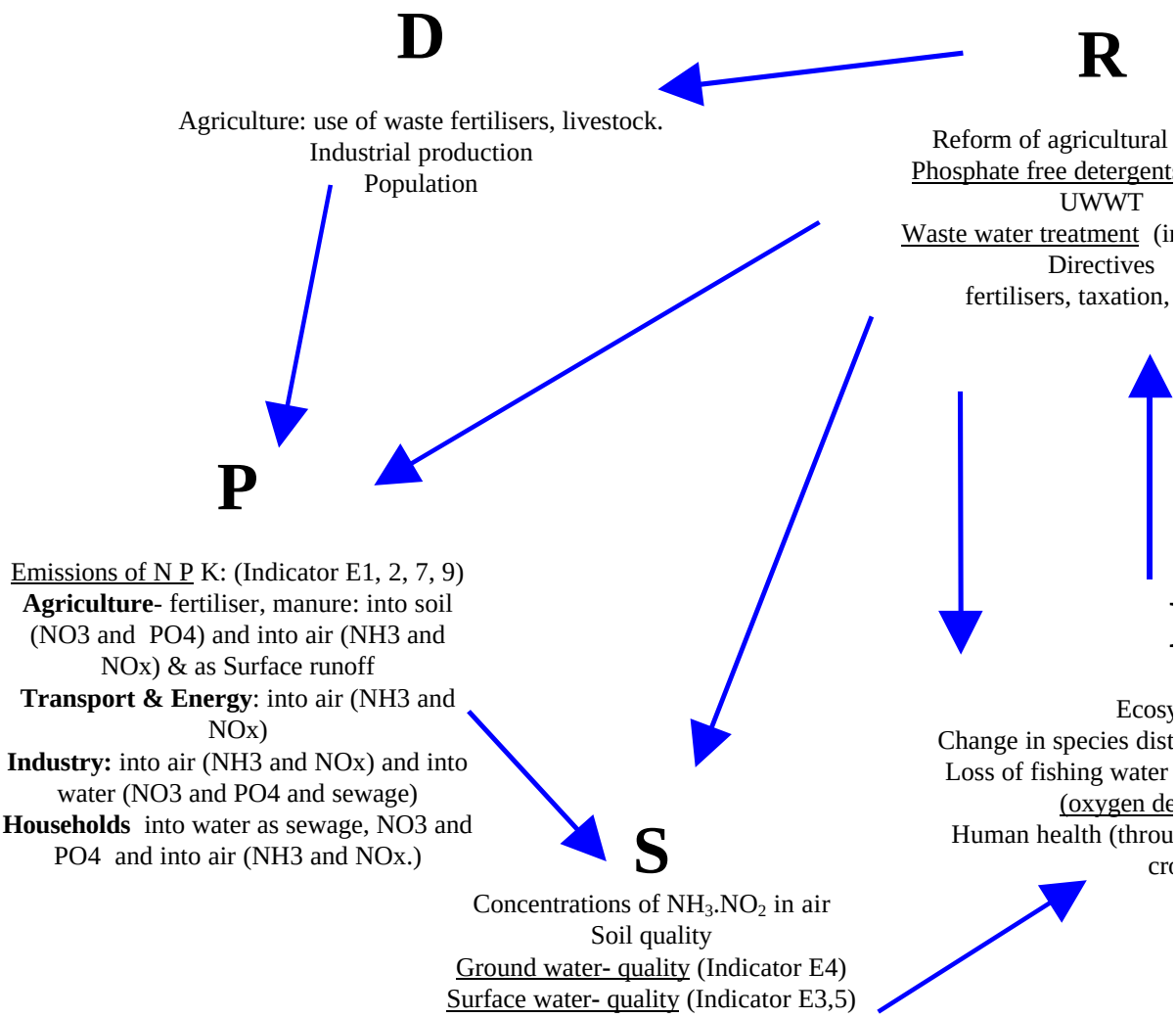
Chapter 6: water quantity



Chapter 6: water quanitity

	Issue/Question	Indicator	Notes and
WN1	How much water is available anyway?	Regional water balance	regions: no central,sou Combined original W
WN3	How do various sectors contribute to the problem of water scarcity (or: is water conservation and sustainable use integrated in other policies?	Water use by sectors (industry, irrigation)/ Water abstraction by municipalities-public water supply.	Focus on re accounts fo uses.
WN4	idem	water use by agriculture	
WN5	idem	public water supply	
WN6	What is the scope for economic instruments to encourage water conservation?	Water price	European c

EUTROPHICATION

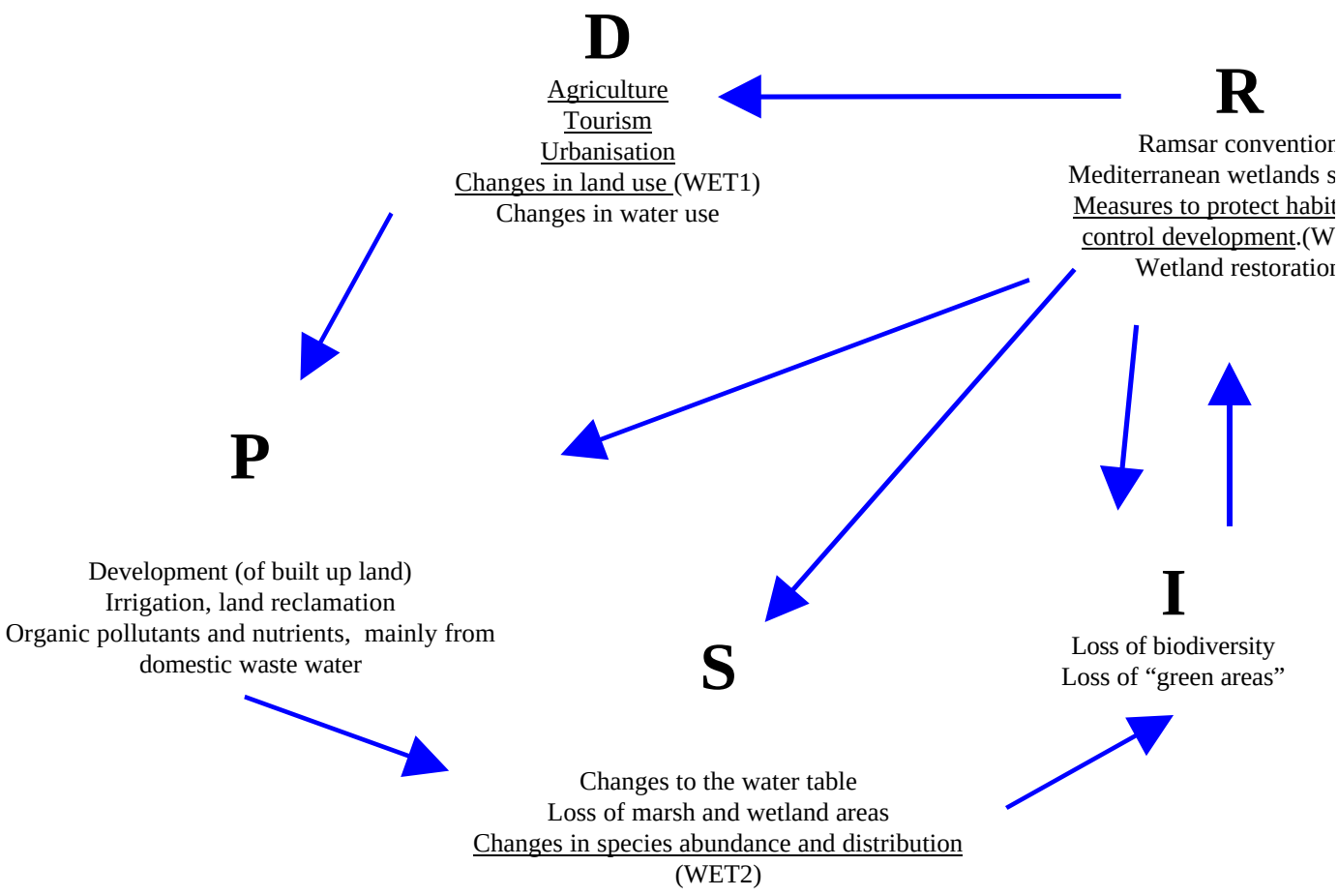


Chapter 7: Eutrophication

	Issue/Question	Indicator	Notes and a
E1a & b	What have been contributions to the total load[1)] of N and P by main source categories?	Source appointment of loading with N and P	
E2	Has the balance of in-and outputs of nutrients in agriculture been realised?	Nitrogen balance-N-surplus	longer tren countries.
E3a &b	Is the incidence of nitrate concentrations >50mg /l in surface waters decreasing? Is the phosphorous concentration decreasing?	Nitrate and phosphorous concentration in rivers	P in rivers in rivers
E4a &b	How big is the area where groundwater quality aims for nitrate and phosphate are exceeded?	Nitrate in groundwater	developme selection o only (E4b)
E5	What is the trend in marine eutrophication?	Nitrate and phosphate in coastal waters	N for north for Souther
E6	Oxygen depletion in coastal/marine waters?	Bottom dissolved oxygen in major seas	
E7	Are targets for N and P flows in the seas being reached?	Inflow of N and P in Northsea, Baltic Sea (and Mediterranean Sea) compared with reduction targets	related to s appointmer
E8	What has been the effect of the UWWT-directive?	Urban waste water treatment, 1980-1995	selection o
E9	continued….(How did that influence the emissions?)	Point source emissions of phosphorious (1980- mid 1990s)	selection o
E10	continued…(What other measures have been taken?)	Consumption of phosphate in detergents	positive inc selection o Germany, I France, Sw

Chapter 8: Wetlands

WETLANDS

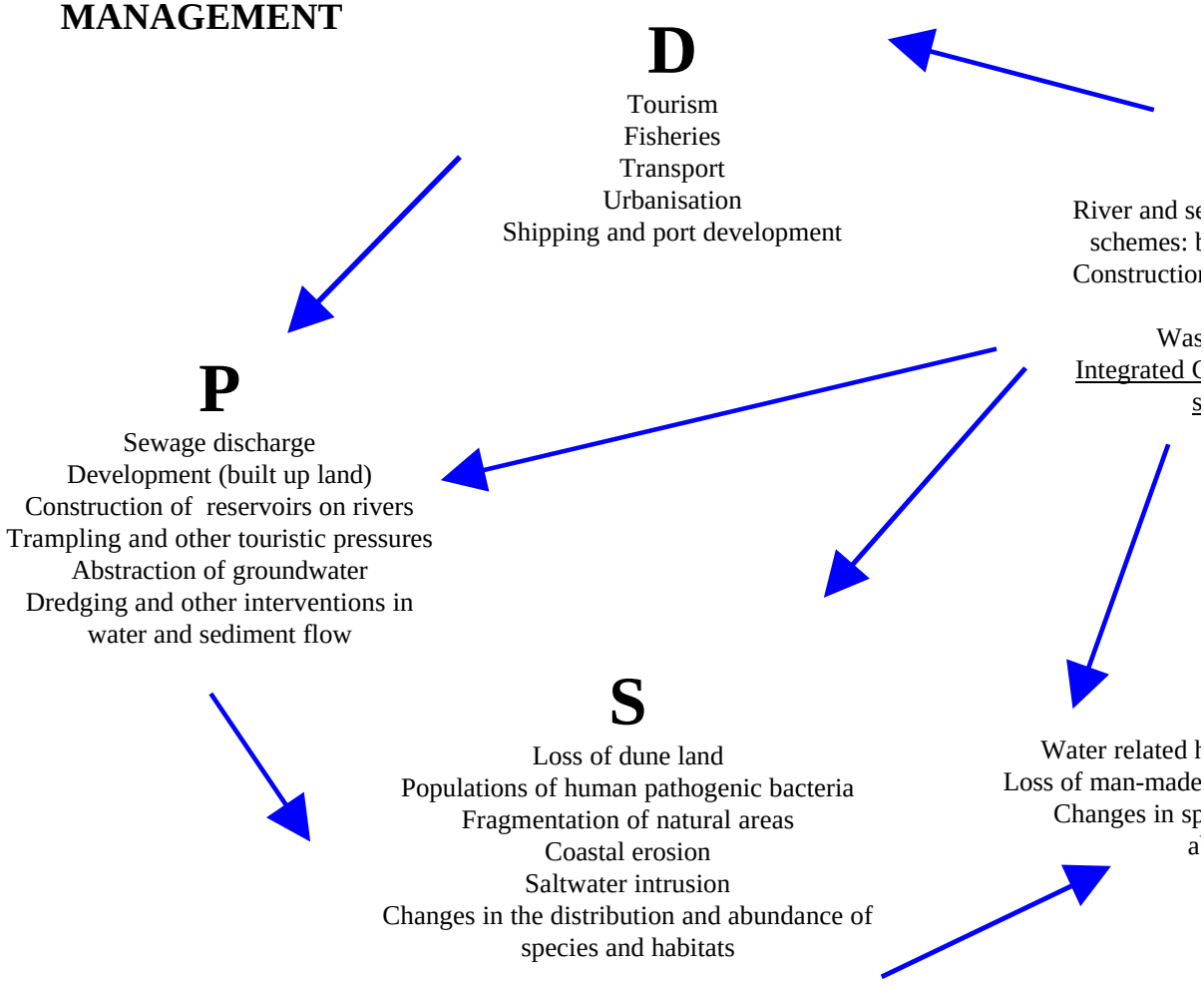


Chapter 8: Wetlands

	Issue/Question	Indicator	Notes and a
WET1	What are the pressures originating from land use on wetlands?	Pressure on wetlands from land use	Indicator fo pressure on and Wetlan Protection only). Widt bufferzones more?). SKETCH C
WET2	How are these and other pressures influencing the existence and distribution of the associated flora and fauna?	Wetland species diversity	probably se (combinati index consi SKETCH C
WET3	How much wetlands (of international importance) are protected from damage or loss?	Areas designated under the International Convention on Wetlands – Ramsar, 1971 (1974-1999)	

Chapter 9: Integrated Coastal Zone Management

COASTAL ZONE MANAGEMENT



Chapter 9: Integrated Coastal Zone Management

	Issue/Question	Indicator	Notes and a
ICZ1	What is the status of developing ICZM schemes?	Progress in the establishement of Integrated Coastal Zone Management (ICZM).	

NOTE: The other more detailed progress indicators (ICZ2-6) originally proposed for this chapter could not be produced. The application of the criteria for measuring progress on a more detailed level appeared to be too difficult.

Chapter 10: Environmental taxes (rotating)

	Issue/Question	Indicator	Notes and
TAX1	how many?	Nr of taxes, split by sector	Evaluation the aim is more in nu still it give picture of
TAX2	how much revenue?	Revenue from taxes as % of total tax income (energy, environment, transport)	With a sup small indic the develop on all prod (1980-199 with the to
TAX3	Progress in ecotax reform?	Table summarising developments in European countries. %of tax revenue shifting from labour to environment.	

Tentative list of contents of next editions of the EEA yearly indicator report.

1999	2000	2001	2002
sectors agriculture industry energy transport	**sectors** agriculture industry energy transport households	**sectors** agriculture industry energy transport households tourism fisheries	**sectors** agriculture industry energy transport households tourism fisheries
issues climate change strat ozone acidification summersmog waste	**issues** climate change acidification summersmog waste (with focus on end of life vehicles, electronic equipment and hazardous waste)	**issues** climate change strat ozone acidification summersmog waste (overview)	**issues** climate change acidification summersmog waste (varying focus)
water quantity eutrophication wetlands	(drinking) water quality urban waste water treatment other landscape/ecosystem	water quantity pesticides in groundwater, rivers and lakes other landscape/ecosystem and/or: development in species (richness/threatened/in designated areas)	other focus eutrophication other landscape/ecosystem
ICZM	oil discharges (maybe wider: harmful substances) soil	biodiversity? Or : chemical pollution.	ICZM/spatial development soil
horizontal responses env. taxes	**horizontal responses** other instrument	**horizontal responses** other instrument	**horizontal responses** env. taxes
“Once-only chapters” TMR	**“Once-only chapters”** tourism: state in indicators	**“Once-only chapters”**	**“Once-only chapters”**

Envisaged development in spatial coverage:

1999	2000	2001	2002
EEA18	EEA18 +accession countries	pan-european (special edition for 2002 Kiev Ministerial conference, if resources will be available)	EEA18 +accession countries (and other members by that time)

please note that the 1999 (etc.) edition will be ready at the beginning of 2000 (etc), with the current schedule continued.

Peter Bosch
15-04-1999

Indicator Fact Sheet Model

Concept

A model for the Indicator Fact Sheet of the Yearly Indicator Report is presented on the following pages. It goes with a guideline for completing the elements and two elaborated examples.

The function of Indicator Fact Sheets is twofold: first they will serve as documentation of the indicators used, and secondly the draft version of the Fact Sheets are distributed to the Member States to ensure data quality and in some cases to encourage countries to update or revise their data.

The assessment and writing of the final chapters and sections in the report will be based upon the completed Fact Sheets.

Design

The proposed model for the Indicator Fact Sheets is a composite of a number of earlier works addressing the same idea. The basis for the model is found in: “Feasibility Study on the production of an Yearly EEA Indicator report”, (NERI, 13-10-97); “Framework for the presentation of EEA indicators”, an EEA internal document; “EEA State-of-the-Environment and Outlook Report - EU98 Technical Annex”, EEA publication, 19 October 1998; “Towards a TERM for the EU”, EEA draft. Design criteria for the Fact Sheets also follows the ETC/CDS standards (EEA document “Standard element set for GELOS records”).

The making of a good indicator

Those elements selected to be included in Indicator Fact Sheets must be relevant and sufficient to meet the requirements of the Assessment and Writing phase. Therefore, it is important to understand what makes a good indicator.

What is an indicator?

Communication is the main function of indicators. Environmental indicators provide information that is considered to be critical to the development of environmental problems. It is on this information base that decision makers (ranging from individual consumers to high level policy makers) decide to take action or not.

To make this communication process work simplicity is needed. Indicators simplify a complex reality. An indicator distils information derived from analysing data obtained by monitoring and data collection. Raw data or statistics do not make an indicator without analysis and synthesis.

A paradox of indicators is that it is impossible to express the condition of a system (e.g. human system or eco-system) without them, but once you separate the system into measurable parts you are at risk to lose all sense of it as a whole. Each indicator by itself tells something about the one issue it represents but virtually nothing about the larger features or the system as a whole. Only by combining the indicators it is possible to reveal those features and gain a view of the system. When the indicators are combined they can show the conditions and trends of the system, of people and the ecosystem, and of major components (health, economy, resource use, bio-diversity, etc.). In the 1999 Yearly Indicator Report indicators are combined in chapters telling a story on the development of environmental issues.

As the system we are looking at is roughly described as the interactions between human activities and environmental quality, the framework used in the EEA indicator report is the DPSIR framework, linking human activities to their ultimate environmental impacts and the societal responses to these impacts.

In principle one indicator is equivalent to one diagram: in the most basic form two axes, with time on the X-axis, a line showing development of the indicator and a target. However, sometimes the message can be communicated better by presenting two diagrams next to each other: The main one would for instance show the overall development of the indicator, while a sub-diagram would show developments in the main sector or area of importance.

There are different types of indicators useful in the context of supporting environmental policy: descriptive indicators (type A), performance indicators (type B) and efficiency indicators (type C). Descriptive indicators exist for all elements in the DPSIR framework, and describe the development of a variable related to an environmental issue. In fact, all indicators are descriptive but not all indicators are performance indicators.

Performance indicators measure the achievement of stated objectives or with a specific set of reference conditions. By doing this they enable a 'distance to target' assessment. Performance indicators are especially relevant if specific groups or institutions can be held accountable for reaching the targets. Performance indicators relate mostly to Driving Forces and Pressures, sometimes to State.

Some indicators express the relation between separate elements of the DPSIR causal chain. Most relevant for policy making are indicator that relate pressures to human activities (P/D), thus giving an insight into the eco-efficiency of processes and products.

Key questions

The content of the Fact Sheets will allow the following general questions to be answered. These questions are a test that is applied to each Fact Sheet submitted for review and acceptance.

- Is the indicator attractive to the eye (accessible)?
- Is the indicator easy to interpret correctly? Does it match the interest of the target audience?
- How is this indicator representative to the issue or area being considered?
- What are the causes behind the development (trends) of the indicator?
- Is the indicator based on data which are updated at regular intervals?
- What is the shortest time period required to show change?
- Is there a reference value for comparing changes over time? What is this value? What change could be expected when random errors are considered?
- Is the data (raw data or indicator data) allowing international comparability? What would make the data non-comparable (differences in National definitions, changes over time to the definition and methodologies, etc.)?
- Scientifically, is the work well done? Is the indicator well founded and of good quality (data & methodology)?
- Is there consensus on the data validity: data collection methods, statistical methods, etc.

The YIR Model

The draft model of the YIR Fact Sheet is presented on the next pages. This model draws from a number of existing materials and examples available at the EEA.

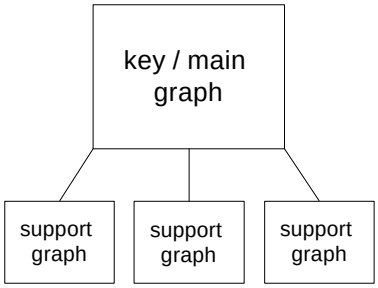
There are 3 sections:

- Fact Sheet Template
- Detailed descriptions for each element
- 2 Example Indicator Fact Sheets.
  Please note that for practical reasons the examples have been made for EU15. The 1999 YIR covers all EEA-18 countries.

Indicator Fact Sheet Template

(Code)Title of indicator

insert: Graph(s)



(code)title of Graph [=> Repeat for each Graph]

☺ **Key message** [=> Repeat for each Graph]

Results and assessment (level of the indicator)

Relevance of the indicator for describing developments in the environment

>> insert:5-10 lines of description <<

Policy relevance and policy references

>> insert:4-5 lines of description <<

Assessment

>> insert:5-15 lines of description <<

Data (for each graph created)

>> Insert a publication-ready table containing the background data for the indicator on country level and as a total for EEA 18 and EU15. Select in the number of years if necessary to keep the table readable.

>> Provide additionally two spreadsheets: A) base data by country and year

B) manipulated data for the indicator <<

Meta data

Technical information

1. Data source
2. Description of data
3. Geographical coverage
4. Temporal coverage
5. Methodology and frequency of data collection
6. Methodology of data manipulation

Quality information

7. Strength and weakness (at data level)
8. Reliability, accuracy, robustness, uncertainty (at data level)
9. Further work required (for data level and indicator level)

Descriptions of all elements

Fact Sheet Element	Description/definition
1. General + graph	
Language	The working language for the YIR is English. All documents should be prepared in this language.
File format	Digital files of the Fact Sheet : Microsoft Word for Windows 95, version 7 Digital files of spreadsheets: Microsoft Excel for Windows 95, version 7
Code	Indicator codes will be systematically assigned to chapters, graphs, tables. Codes will be developed by EEA Project Manager (Peter Bosch) specifically for the YIR. These codes can be found in the list of contents. Example for table in the chapter on Air Pollution: (*AP)Table 1.*
Title/name of graph	This is the a short descriptive title of key words (maximum 10 words). Example for table in the chapter on Air Pollution: *(AP)Table 1: Air pollution trends in EU urban centres, 1990-1997.* Each title should include the indicator code.
Graph / diagram	The following is a check list. Each graph must have a technical description: ☐ Title of key words. ☐ Years, preferably on the x-axis. ☐ Units of measure or countries, on y-axis. ☐ Legend, key of symbols. ☐ Source information - place below the graph. ☐ Notes located below the graph. ☐ Identify/name the graph with the Indicator code. ☐ Check if the graph is still readable if reproduced with a black/white photocopying machine.
Targets	Include on the graph relevant policy and/or sustainability targets.
Geographical groupings	The following are guidelines for the geographical groupings of countries: • EU15: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, United Kingdom. • EFTA 3: Iceland, Norway and Liechtenstein (! not Switzerland). • EU15 + EFTA 3: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, United Kingdom, Iceland, Norway and Liechtenstein (not Switzerland) • North EU + EFTA 3: Austria, Belgium, Denmark, Finland, Germany, Ireland, Luxembourg, the Netherlands, Sweden, United Kingdom, Iceland, Norway and Liechtenstein • North EU: Austria, Belgium, Denmark, Finland, Germany, Ireland, Luxembourg, the Netherlands, Sweden, United Kingdom • South EU: France, Greece, Italy, Spain, Portugal
Time series	In general a time series 1980 - 1997 is preferred, if not possible present 1990 - 1997. See also the list of contents.

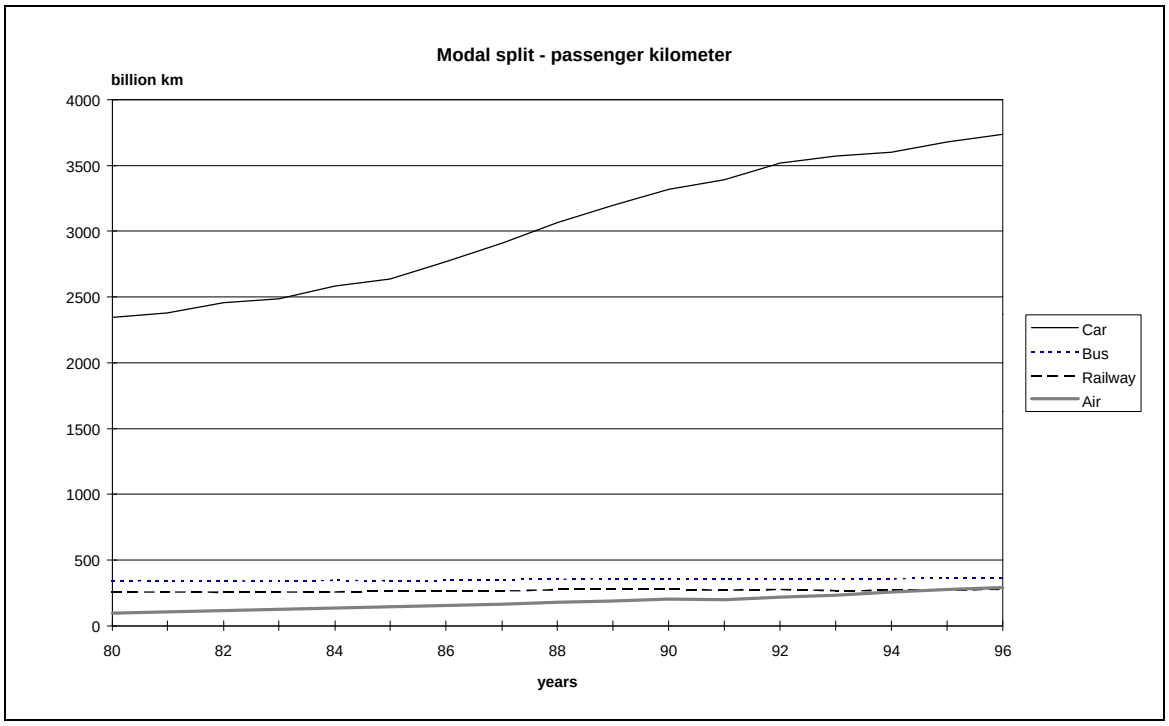
Fact Sheet Element	Description/definition
Key message	This is the eye-important message for each graph presented. Examples include: • ☺ In England, about 55 per cent of new homes are now built on previously developed land. The Government has set a target of 60 per cent to be achieved by 2008. • 😐 In Iceland the total length of roads has remained stable for the last 15 to 20 years and no major changes are expected in the near future. Iceland has just over 0.1 km road per km^2 land. • ☹ Although between 1980 and 1990 the NO_x deposition in the Netherlands dropped slightly, the actual emissions from Dutch sources did not drop in that period. The reductions achieved by cleaner cars and power plants was off set by growth in the number of vehicles and equipment.
Positive, neutral, negative assessments	There are 3 rankings or subjective valuations available: • Positive ☺: - development of *driving forces* or *responses* in a direction that reasonably should lead to lower environmental pressures - decreasing *pressures* on the environment in such an extent that targets have been reached or are coming within reach - decreasing *pressures* on the environment showing (the beginning of) an absolute decoupling from the development of the causing activities - improvement in the *state* of the environment, targets/guidance values only exceeded in a small (<15%) part of the area/for a small (<15%) part of the population. • Neutral 😐: - developments in the *driving force* or in *pressures* on the environment are levelling of - reductions in *pressures* on the environment, but insufficient to bring targets within reach - reductions in the concentration levels/improvement in the *state* of the environment, but targets/guideline values are still exceeded in >15% of the area/ for >15% of the population - no changes in *pressure* on and *state* of the environment - mixed developments within the indicator. • Negative ☹: - *driving force* or *response* development that reasonably should lead to higher environmental pressures - increasing *pressures* on the environment - decreasing *quality* of the environment. The assessment value needs to be presented next to the "key message" of each graph. Unless it is mentioned explicitly, the assessment should be made for the whole period shown.
2. Results and assessment	
Relevance of the indicator for describing developments in the environment	What is the scientific relevance of this indicator? For which environmental process is it indicative? (refer to other indicators if relevant)? What does the indicator show that we should be concerned about?
Policy relevance of the indicator	What is the policy relevance of the indicator? Have policy targets been agreed for the variable? And are there sustainability reference values available, with what difference? Which policy instruments may influence the developments in the indicator? (note: some indicators have been added mainly because of public concern, describe in that case, why so). Add references to policy documents which contain the policy statements that are to be evaluated with this indicator.

Fact Sheet Element	Description/definition
Assessment	*An assessment must be given for each of the indicators individually.* The assessment must cover the following elements: - the explanation of the trend: what have been the causes for its development. Be as precise and quantitative as possible, give results of and refer to background studies analysing the effect of various technical measures and structural developments in the various countries. - list separately the policy measures that have influenced the trend and give an account of the magnitude of the influence. - the reasons why targets/guidance values are reached or not reached. Mention relevant policy developments which have hindered/promoted reaching of the targets. Mention, if not done already, developments in society and technology that have played a role. - the implications of the development of the indicator (1) for the environment (refer to other indicators) and (2) for policy makers. If relevant highlight any regional differences.
3. Data	
Presentation of a data table	Make sure that each table has: ☐ title in key words. ☐ units of measure. ☐ name of the worksheet is clearly linked to the YIR indicator code. ☐ headings for all columns and all rows, definitions of the headings are defined in the notes at the bottom of the table (if not obvious). ☐ table notes are provided under each table and explain key data issues found within the table. ☐ short description of source of the data in the table ☐ decimal symbol is the "**.**" (point) and not "**,**" (comma). ☐ put years always on the x-axis ☐ put countries always on the y-axis
4. Meta Data	
Technical information	This section refers to all descriptive and technical information about each indicator. This information is essential, and all the elements are considered mandatory.
Data provider (source)	Raw data, manipulated data and the final indicators should be based on existing international data sources, and these should be prepared if missing. Here is a check list, cite the data source in the following way: ☐ Contact organisation. ☐ Point of contact / person. ☐ Copyright and other restrictions that might apply. ☐ Other places where the data has been published.
Description of data	The following is a check list. All data presented in a Fact Sheet should have the following information provided: ☐ Original name of the data file. ☐ Unit of measure of original data. ☐ Original projection files (geographic data). ☐ Original purpose of the data.
Geographical coverage	This indicates if the extent includes EU15, EU15 + EFTA 3, pan Europe, etc. For the first version of the YIR, the geographical coverage is either EU15 or EU15 + EFTA 3.

Fact Sheet Element	Description/definition
Temporal coverage	Describe the time referencing of the data (annual, bi-annual, daily, etc.) Clearly note all times for which data was observed, the earliest temporal coverage and the most recent, and in-between.
Methodology and frequency of data collection	Summarise the methodology used to collect the raw data, and note the frequency of this collection procedure. Example: A data set is collected by a house to house survey of a sample set of the population. The results are then extrapolated to provide an idea of the entire population. Data are gathered annually by each country.
Methodology of data manipulation: from base data to indicator	Describe the methodology used to create the indicator. Provide: ☐ formulas and calculations; ☐ assumptions that influence the methodology (e.g. reliability); ☐ name of equation or the statistical method, ☐ management of rounding up or down, errors, decimals, etc. ☐ reference list: citing of methods.
Quality information	This section refers to quality of the information, and the focus is the data level. This information is important to develop a full appreciation of the indicators presented in a Fact Sheet, and all the elements are considered mandatory.
Strength and weakness (at data level)	This is for the data level. Describe the strengths of a data set, and also the weaknesses of the data set. Examples include: *Strength* of a data set is the mandatory requirement for the collection and the results are harmonised at the EU level. *Weakness* of a data set is that different definitions or methodologies are used, and so the results are not completely comparable.
Reliability, accuracy, precision, robustness, uncertainty (at data level)	At data level - the purpose is to record the quality of the data being used, what is known and unknown. Example: if a data set is based on a survey of the population, and the figures for the total population are derived by extrapolation, then the reliability of the data values is dependant upon the original sample size.
Further work required?	This addresses both the data level and indicator level. Reflect with expert knowledge what is and is not available, and what would be the most useful next steps: new data, better data, revised methods, etc.

Indicator Example 1: Passenger Transport

(Code)Passenger transport car, bus, train and air in the EU15 countries, 1980-1996 [Note: should be EEA18!]



(code) Passenger km by mode.

Note: For air transport European traffic only (Source : AEA, IACA and estimates). World wide traffic of EU carriers was 550 billion passenger km in 1995.

Source: European Commission (1998): EU Transport in Figures: Statistical Pocketbook . - (3rd issue 1998), Luxembourg: Office for Official Publications of the European Communities; Table: 5.1b.

☹ **the energy-intensive modes (air and road) are expanding most rapidly.**

There is almost a doubling of the distance driven by passenger cars between 1980 and 1996 and an increase of air passenger kilometres by a factor of 3 in the same period.

Passenger transport by rail and busses is nearly constant since 1980

Results and assessment (level of the indicator)

Relevance of the indicator for describing developments in the environment

The transport sector is responsible for 63% of NO_x-emissions, 45% of VOC-emissions and 20% of the total emission of greenhouse gases (EU15, 1994). Passenger transport by road contributions are generally in the order of 20% of total for NO_x, 25% for VOC and 8 % for total greenhouse gases. This makes passenger transport and the modal split in it, an important driving force for Acidification (see indicator AC3.88 for contributions of other sectors), Tropospheric ozone (see also indicator TP5.99) and Climate change (see indicator CC2.01 for contributions of other sectors). Passenger transport by road is the most important source of lead emissions by traffic. Additionally the growth of traffic intensity has lead to the building of more infrastructure in most European countries.

Policy relevance and policy references

Various initiatives are under way to influence the modal split: improvement of local passenger transport, internalisation of external costs, revitalisation of public transport, and the TEN-project.

References: COM(95) 302: The Common Transport Policy Action Programme 1995 -2000

Assessment

The indicator shows that energy-intensive modes (air and cars) are the ones which are still expanding most rapidly and on the other hand that more environment modes (rail and bus) have a nearly zero growth in the period of 1990 to 1996. This trend is expected to continue in the future considering the current growth of transport volume.

In terms of travel intensity per person, the average distance travelled by each person was 7 170 km in 1970; by 1995 it had risen to 13 390 km, representing an annual average growth rate of 2.5%. The major part of this has been due to an increase in passenger car use (3.1% per year), but the fastest growth has been in air transport (7.3% per year). Walking is not shown, but remains important. Waterborne transport, although important in some regions, is also not shown because of the low volumes at EU level.

Data

Passenger transport modal split in the EU15 Countries, 1980 -1996
Passenger Private Car
units of measure: 1000 million passenger kilometres

Countries	Years 80	85	90	91	92	93	94	95	96
Belgium	65 376	67 361	80 748	82 940	84 550	86 850	89 480	91 160	92 400
Denmark	38 100	43 200	53 700	55 300	56 600	57 400	59 100	61 450	63 500
Germany*	533 400	565 100	692 100	713 500	731 500	740 800	720 700	730 500	734 900
Greece	45 000	66 600	76 200	79 500	82 500	86 000	90 710	95 000	99 000
Spain	188 900	234 300	282 000	293 400	305 200	311 800	318 600	328 300	339 300
France	452 500	494 400	586 000	599 000	618 000	634 600	651 200	664 300	674 300
Ireland	23 680	25 800	*36 300*	*37 100*	*38 700*	40 000	41 200	42 400	43 800
Italy	324 034	373 700	522 593	538 270	602 210	603 090	600 300	614 500	625 600
Luxembourg	2 767	2 938	3 527	3 700	3 700	3 800	3 900	4 000	4 000
Netherlands	107 100	118 000	136 200	136 700	138 640	140 450	146 900	146 800	145 900
Austria	47 800	49 800	62 400	70 400	69 300	67 900	68 200	68 100	65 700
Portugal	41 000	53 000	65 000	67 500	71 600	82 880	90 000	99 500	105 000
Finland	33 900	39 500	51 200	50 600	50 500	49 700	49 600	50 060	50 400
Sweden	66 700	72 500	90 000	91 400	91 700	90 700	84 000	87 000	84 500
UK	388 000	441 000	588 000	582 000	583 000	584 000	595 000	606 000	620 000
EU 15	**2 358 257**	**2 647 199**	**3 325 968**	**3 401 310**	**3 527 700**	**3 579 970**	**3 608 890**	**3 689 070**	**3 748 300**
Germany ptw	11 480	10 250	9 020	13 000	12 000	11 000	10 500	10 700	10 700
Cars-PTW	**2 346 777**	**2 636 949**	**3 316 948**	**3 388 310**	**3 515 700**	**3 568 970**	**3 598 390**	**3 678 370**	**3 737 600**

Notes: base data by country, year for private cars
* Germany east and west
Source: ECMT and European Commision (1998): EU Transport in Figures: Statistical Pocketbook . - (3nd issue 1998), Luxembourg: Office for Official Publications of the European Communities; Table: 5

[note: the table should cover EEA18 countries, with on the bottom lines total EEA18, 'of which' total EU15]

name of the attached file with the original data spreadsheets and the graph: **ex_tra.xls**

Meta data

Technical information

1. Data source: European Commission (1998): EU Transport in Figures: Statistical Pocketbook . - (3rd issue 1998), Luxembourg: Office for Official Publications of the European Communities; Table: 5.1b
   European Commission Directorate General for transport Unit VII/E/1 Beaulieu 31, office 5/30 B-1160 Brussels Belgium e-mail: figures-transport@dg7.cec.be
   or Eurostat Unit C2 (Transport statistics) Jean Monnet building, L-2920 Luxembourg e-mail: transport.unit@eurostat.cec.be
2. Description of data:
   original name of data file: transport pocketbook Jan 99.xls from DGVII add. ref. <http://europa.eu.int/en/comm/dg07/tif>or <http://europa.eu.int/eurostat.html
   original measure units: 1000 mio passenger km
   original purpose: the main aim of this pocket book is to provide transport statistics for the EU Member States in a user-friendly way. Most of the data cover the period 1970-97.
3. Geographical coverage: EU15
4. Temporal coverage: yearly from 1970 to 1996
5. Methodology and frequency of data collection:
   The pocket book is based on Eurostat statistics and on data from other international organisations, national statistics, studies and, where no data was available, estimates
6. Methodology of data manipulation:
   sum up the kilometres for all EU15 countries per mode (car, buses, train, air)
   change million km into billion km

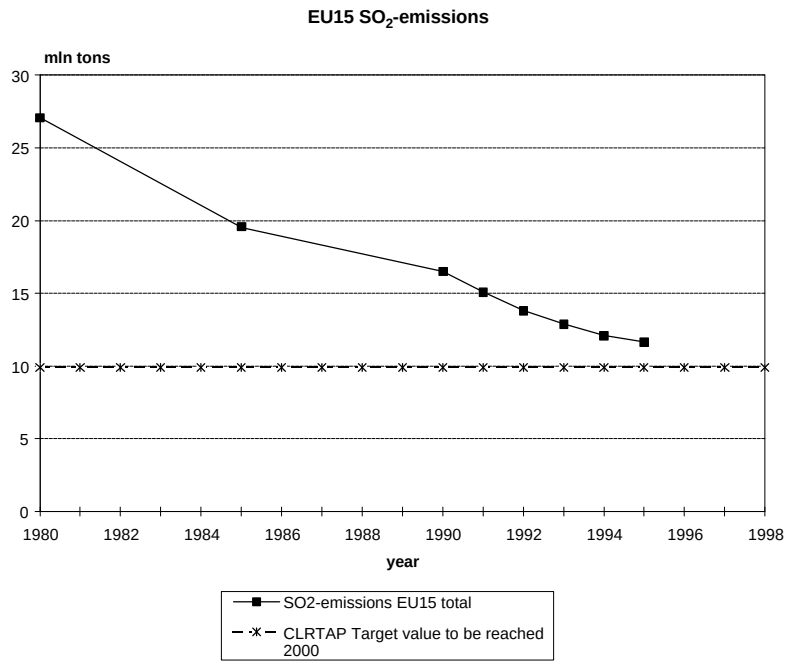
   round up or down to the next integer

Quality information

7. Strength and weakness (at data level):
   Passenger kilometres in cars are derived from combination of the more accurate statistics on vehicle kilometres of passenger cars with various national data. Also the other series contain estimates. Bus and Road transport are the most reliable. However, definitions differ between countries and modes. For road transport, the figures, in principal, represent national traffic by vehicles registered in the reporting country, and therefore exclude international road traffic. Nevertheless, it is quite likely that at least a part of this traffic is included. Rail includes national and international traffic on national networks. Air includes national and international transport within the European Union.
8. Reliability, accuracy, robustness, uncertainty (at data level):
   Bases data for mode air exist only from 1988 to 1992 (excluding Eastern Germany): For other years EEA calculations and estimations have been used.
9. Further work required (for data level and indicator level): statistical improvements.

Indicator Example 2: SO_2-emissions

(Code)Trends in SO_2-Emission



(code)EU15 SO_2-emission

Source: EEA–ETC/AE: (European Environment Agency and European Topic Centre on Air Emissions): Data compiled by EEA, based on national emission estimates reported to UNFCCC (United Nations Framework Convention on Climate Change), CLRTAP (Convention on Long- Range Transboundary Air Pollution) and in some cases to EEA–ETC/AE directly.

☺ Since 1980 SO_2-emissions in the EU15 countries have been strongly reduced: more than 50 % over the period 1980 - 1995, and more than 30% from 1990-1995. The CLRTAP target value for EU for 2000 is coming within reach.

Results and assessment (level of the indicator)

Relevance of the indicator for describing developments in the environment

SO_2-emission is one of the constituent components of the acidification, which causes damages to soil, organisms and buildings. As a part of urban air pollutants it has impacts on the human health. The anthropogenic emission of SO_2 originates mainly from the combustion of sulphur containing fuels. Main sources are the Energy sector (60%), Industry (25%), Transport (6%), Household (1% (EU15, 1994). (See also indicators EN3.4, IN3.4, TR4.5).

Policy relevance and policy references

Since the 1970s transboundary air pollution problems have been intensively studied and analysed. Multinational reduction strategies have been agreed in the UN-ECE-Convention on Long Term Range Transboundary Air Pollution (CLRTAP) and, more recently by the European Commission. The 5EAP target is a reduction in 2000 of EU15 emissions of 35% from 1985 levels. The CLRTAP has a target of a 60% gap closure of the exceedance of critical sulphur deposition to be reached in 2000. This requires a 62% reduction of EU15 SO_2 emissions in 2000 from the 1980 levels, or a 40% reduction from the 1990 level. The proposal in the Commission Acidification strategy (1997) is a 84% reduction of the 1990 level to be reached in 2010. Final reduction targets for all EU member states will be laid down in the National Emissions Ceilings Directive, expected to be adopted in 1999.

References:

European Commission' strategy to combat acidification COM(97)98.

Protocol to the Convention on Long-Range Transboundary Air Pollution on Further Reduction of Sulphur Emissions (1994 Sulphur Protocol), Oslo, 14 June 1994

Assessment

The SO_2 reduction was due to fule shifting (from coal to natural gas), renewal of power plants, use of low-sulphur fuel coal and flue gas desulphurisation. Implementation of policies in place is estimated to substantially further decrease SO_2-emissions.

For the EU15 the 5 EAP target of 30% reduction has been met: emissions are reduced from 19,6 million ton in 1985 to 10,8 million ton in 1995.

The target value from the CLRTAP Second Sulphur protocol is 40 % reduction from the 1990 value to be reached in 2000. This seems to be coming within reach. The proposed target of the Acidification strategy for 2010 will be difficult to reach.

Data

Trends in total SO2 emissions in the EU15 countries from 1980 - 1995

Unit: 1000 tons

Country \ Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Austria	410	359	339	256	227	201	177	161	116	103	93	85	65	62	56	60
Belgium	828	712	694	560	500	400	377	367	354	325	317	324	304	294	253	253
Denmark	452	370	378	322	304	342	291	257	253	196	182	239	186	152	155	150
Finland	584	534	484	372	368	382	331	328	302	244	260	194	141	124	112	96
France	3338	2588	2490	2094	1866	1470	1342	1290	1226	1334	1307	1400	1230	1099	1047	990
Germany	7514	7441	7440	7346	7633	7732	7641	7347	6478	6196	5327	4172	3436	3153	2994	2130
Greece	400	.	.	.	.	500	.	.	.	.	510	522	533	545	556	556
Ireland	222	192	158	142	142	140	162	174	152	162	178	179	161	157	177	166
Italy	3800	.	.	3150	2656	1733	1742	1890	1911	1885	1678	1571	1424	1490	1437	1437
Luxembourg	24	.	.	14	.	17	.	.	.	.	14	14	14	15	13	8
Netherlands	490	464	404	323	299	261	264	263	250	204	202	173	172	164	146	147
Portugal	266	.	.	.	.	198	.	.	.	.	283	297	351	300	272	272
Spain	3319	.	.	2543	.	2190	1961	1903	1587	1950	2266	2223	2195	2061	2061	2061
Sweden	508	431	371	305	296	266	272	228	224	160	136	112	103	101	97	94
United Kingdom	4913	4468	4254	3899	3733	3766	3941	3927	3850	3722	3756	3585	3484	3185	2719	2365
EU15	27068					19597					16508	15090	13800	12902	12096	10785

Notes:S02-emissions in the EU15 countries, 1980-1995

Source:

EEA–ETC/AE: (European Environment Agency and European Topic Centre on Air Emissions): Data compiled by EEA, based on national emission estimates reported to UNFCCC (United Nations Framework Convention on Climate Change), CLRTAP (Convention on Long-Range Transboundary Air Pollution) and in some cases to EEA–ETC/AE directly.

FOOTNOTES :

a) From completed questionnaires.
b) Data submitted to CLRTAP/EMEP in 1997.
c) Data for 1990-1995 supplied to EEA from National Focal Point, for other years data submitted to CLRTAP/EMEP in 1997.
d) Data from 1993 onwards are provisional.
e) Provisional data for 1995.
f) Data for 1990-1993 supplied to EEA by National Focal Point, data for other years submitted to CLRTAP/EMEP (in 1997).

name of the attached file with the original data spreadsheets and the graph: **ex_so2.xls**

Note that the table should include EEA18 countries, with a total EEA18 and a total EU15.

Meta data

Technical information

1. SOURCE:

   EMEP/MSC-W (1998)

   European Environment Agency and European Topic Centre on Air Emissions (1998)

2. Description of data:
   original name of data file: EEA Data Warehouse, chapter acidification/emission, table: Trends in total SO_2 emissions
   original Measure units:1000 tons
   original purpose of the data: Data compiled by EEA, based on national emission estimates reported to UNFCCC (United Nations Framework Convention on Climate Change), CLRTAP (Convention on Long -Range Transboundary Air Pollution) and in some cases to EEA–ETC/AE directly (see footnotes on base data spreadsheet).
3. Geographical coverage: EU15
4. Temporal coverage: all countries 1980, 1985, 1990; Greece, Italy, Luxembourg, Portugal Spain: annual from 1990-1995; other countries: annual from 1980 to 1995.
5. Methodology and frequency of data collection: annual national submission to UNECE/CLRTAP. Combination of emission measurements and emission estimates based on volume of activities and emission factors.
6. Methodology of data manipulation:
   calculating the EU15 totals
   change 1000 tons to million tons

Qualitaty information

7. Strength and weakness (at data level):
   strength: annually updated, official submissions. Weakness: mix of national methods.
8. Reliability, accuracy, robustness, uncertainty (at data level):

   Data have been validated by EMEP and others by means of comparison between modelled and measured concentrations throughout Europe. The uncertainty is approx. ±10 %.
9. Further work required (for data level and indicator level) : Member states to improve timeliness of the submission of their estimates. Substantial further work by ETC/AE and EMEP is needed to collect reliable and consistent series of sectoral emission