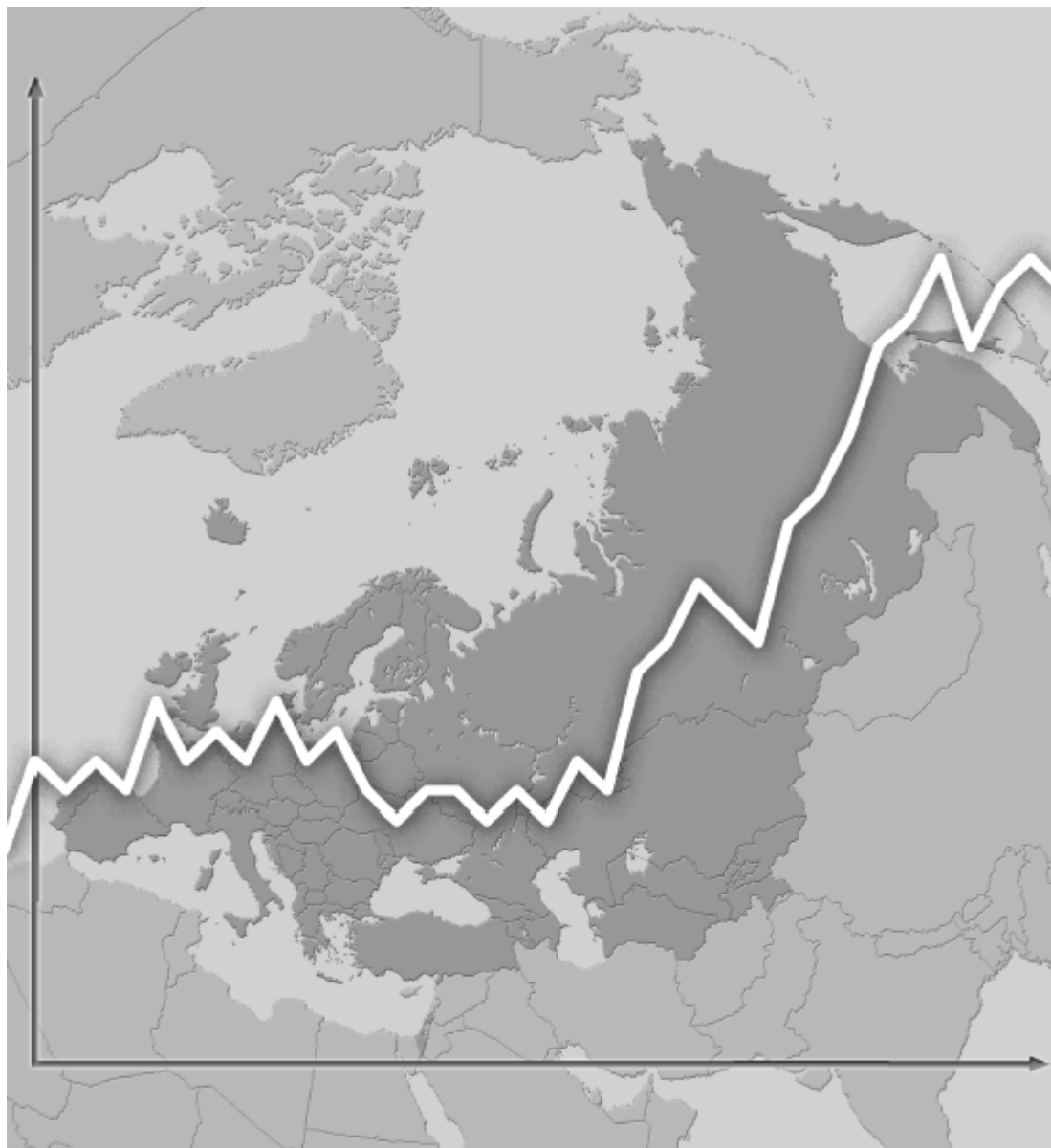


ENVIRONMENTAL HEALTH INDICATORS FOR THE WHO EUROPEAN REGION



TOWARDS REPORTING

OCTOBER 2002

**Environmental Health Indicators
for the
WHO European Region**

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Towards Reporting

**Report on the WHO Working Group Meeting
Bonn, 28-29 October 2002**

ABSTRACT

In Spring 2002, several Member states of WHO/Europe began the pilot implementation of the environmental health (EH) indicator system. This involved applying an agreed protocol on data collection, methods of data presentation and analyses and indicator-based reporting. This meeting reviewed the progress achieved so far, in the pilot study and evaluated the software ('EuroIndy') developed to harmonise data exchange and reporting on environment and health. The group discussed national and international experiences in communicating information to decision-makers in the environmental and public health sector as well as in the context of national environmental health action plans (NEHAPs). Participating countries adopted the main reporting tool, which was the EH indicator fact-sheet model which allows effective use and re-use of the data and information and they agreed to pilot test it on selected indicators. The meeting agreed on a framework structure for sharing environment and health data and information in a uniform way among various agencies throughout Europe and to produce integrated assessments. Participating countries reaffirmed their commitment to advance the process and to contribute to the proposal for an environment and health indicators system, which is comprehensive, policy-oriented and linked with assessment and reporting mechanisms. This proposal is to be presented for endorsement by the Fourth Ministerial Conference on Environment and Health (Budapest, 2004) for WHO European region-wide implementation.

Keywords:

ENVIRONMENTAL HEALTH
EVALUATION STUDIES
HEALTH STATUS INDICATORS
ENVIRONMENTAL MONITORING – methods
EUROPE

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INTRODUCTION

The WHO European Centre for Environment and Health (WHO-ECEH) in Bonn, Germany is implementing an environment and health indicators system based on an internationally agreed methodology. The objective is to improve communication on the main environmental health (EH) issues and related actions in key policy areas. The system will be part of the joint initiative between WHO/Europe and the European Environment Agency, combining an information exchange platform, indicator-based assessment and communication mechanisms for policy-making. It will be proposed for endorsement at the 4th Ministerial Conference on Environment and Health in Budapest, 2004.

Previous stages of the project i.e. selection of the 'core' set for pilot implementation and design of the pilot study protocol are summarized in the WHO/Europe publication "Environmental Health Indicators for the WHO European Region – Update of methodology. May 2002" (EUR/02/5039762 at <http://www.euro.who.int/document/E76979.pdf>). The selected indicators assure uniform assessments across risk factors, coherent reporting from local to national level and comparability between countries. Fifteen countries: Armenia, Bulgaria, Czech Republic, Estonia, Finland, Germany, Hungary, Lithuania, the Netherlands, Poland, Romania, Slovakia, Spain, Sweden and Switzerland are involved in the pilot testing of the EH indicators system and the assessment of its usefulness for monitoring ongoing policies.

The present meeting was convened to:

- review the progress of the pilot study implemented in selected countries;
- select the reporting tools allowing for the most effective use of the collected evidence in the process of policy analysis and environmental health decision-making;
- agree on the follow-up actions in view of the upcoming Ministerial Conference on Environment and Health, Budapest, 2004.

37 experts and WHO staff attended the meeting (see Annex 1 list of participants). Paul Wilkinson was elected chairman, Maria José Carroquino acted as rapporteur. Prior to the meeting the participants received the background documents listed in Annex 2.

SUMMARY OF THE MEETING DISCUSSION

Discussions on progress and follow-up were held mainly in plenary sessions. They were centred on the following subjects:

- progress in implementing the pilot study as well as national and international experiences in indicator-based reporting;
- the concept of the EH reporting system and information exchange: technical and organizational aspects;
- the products to be delivered for the Fourth Ministerial Conference on Environment and Health (Budapest, 2004) within the environment and health information platform for policy-making.

Besides the plenary sessions, discussions were also held in two smaller working groups. Working Group (WG) 1 discussed the main reporting tool – the EH indicator fact-sheet model. Working Group (WG) 2 focused on the outline of the indicator based-report.

Chairman and rapporteurs were:

- | | | |
|------------|----------------------|------------------------|
| - Group 1: | Chair: B. Wojtyniak, | Rapporteur: J. Thelen, |
| - Group 2: | Chair: B. Staatsen, | Rapporteur: A. Cucu. |

COUNTRY EXPERIENCES IN THE PILOT STUDY

Participating countries are actively involved in the implementation of the pilot study and some of them even took up the challenge of producing reports in this pilot phase of the project. They reported the progress achieved so far and shared their experiences with respect to organisational and

methodological issues etc. Participating countries also evaluated the specialised software 'EuroIndy' developed by the WHO-ECEH project team in response to the countries needs and requests.

Most of the countries implemented the pilot study according to the protocol adopted by the WHO WG meeting of 28-30 November 2001, in Bonn. In the Netherlands, implementation started with the development of a meta-information system and a tool for performing rapid inquiries. In Poland the pilot study is being carried out at local level. Most of the participating countries established either a steering committee or a coordination team or unit with the environmental and/or health institutions. In the countries where data-provider agencies were willing to collaborate on the project, the data collection was very efficient. For example, in the Czech Republic, most of the data were already available and in Finland and Bulgaria, data collection has been completed. Data collection was also facilitated in some countries by the existence of a monitoring system already in place (Czech Republic, the Netherlands).

Almost all the participating countries had determined the content of the pilot EH indicator system and the final list of EH indicators had been approved by a steering committee in Armenia, Bulgaria, Czech Republic, Estonia, Hungary, and Spain. In Lithuania, the national list of environment and health indicators together with the procedure for data collection, analysis and presentation have been legally endorsed by order of the Minister of Health. The indicators on "legalization" increased the profile of the project and encouraged the involvement of other institutions, which benefited the entire process of system establishment.

Overall, the pilot study has proved more challenging than the feasibility testing of the core EH indicator set: "It is much more difficult to get the data than to get data-about-the-data". The biggest challenges were identified as data collection, (due primarily to the insufficient inter-agency cooperation on data access/ exchange); lack of a clear structure for a 'central' data collection and differences in the actual data definitions used in the countries. Data accessibility also varies from one country to another. Some countries (Germany, Estonia) suggested that in order to improve data access/ exchange among the different national agencies it should become mandatory.

Collecting data and reporting on EH at sub-national level disclosed different practices in the countries. German data are relatively easily accessible at federal level, while data gathering is simpler at regional level with other member states. Using the WHO methodology provides a good opportunity to identify the differences between the routine data collection system in the countries and the proposed indicators' definitions. It has been agreed that the differences in data collection among the countries need to be carefully documented in order to determine when comparative assessments can be performed. The deviation of the definitions used by each country compared to international ones, should be reported together with the data entry using the Euro-Indy software. Most of the European Union accession countries are considerably advanced in the process and related transposition of legislation. Adjustments in national legislation and reporting requirements will also help to harmonise the EH indicator system at European scale.

Countries have actively participated in testing the 'EuroIndy' software, specialised software that enables the establishment of a database system on environment and health indicators. The timely feedback and thorough comments have enabled the precise identification of database content, which is of utmost importance as the software 'forces' the user to enter data according to pre-defined data-variables. All the countries agreed to use 'EuroIndy' to collect data, to maintain the data and indicators in compatible format for easy integration and exchange data between and within the Member States of the WHO European region.

Concerning reporting, a national report on the 'core' indicator set in Bulgaria, Czech Republic is gradually becoming a component of environmental health reporting. Slovakia, Romania, Poland, Lithuania and Bulgaria are making an attempt to test both 'bottom-up' (from sub-national to national) and 'top-down' approaches in compiling the EH information in the reports. The countries who are actively involved in evaluating their National Environmental Health Action Plan (NEHAP) e.g. Hungary, Switzerland, have already produced indicator reports. Some indicators used in the evaluation process are similar to the WHO core set. The indicators system can be used as regular practice for the ongoing policy program evaluation.

In the context of monitoring the Swiss NEHAP, some of the indicators for outcome evaluation overlap with the WHO EH indicators (e.g. population exposure to air pollutants, traffic accidents, policies to reduce exposure to passive smoking, and annoyance by certain sources of noise). However, for the evaluation of the national implementation process, specifically adapted indicators need to be

developed. The use of common EH indicators allows the country to compare itself to other countries and to monitor the general environment and health situation in addition to priorities set in the NEHAP.

In Hungary, the use of GIS in the NEHAP indicator-based reporting, presents some advantages e.g. in analysing the spatial distribution of health outcomes or exploring the association between pollutants levels and health outcomes. This approach features some limitations (number of environmental indicators on settlement level restricted, not enough data on confounders). Therefore, it is planned to use the WHO core-set indicators in addition to NEHAP's indicators for policy-oriented evaluation of environmental health status.

The National Health and Environment Action programme of the Netherlands adopted for implementation in 2002, aims at integral and transparent decision-making (international, national and local level), information and communication, and also innovation. New indicators (actions, performance, housing, perception, quality living environment) and tools (especially for policy-makers) are still needed to achieve that purpose.

INTERNATIONAL EXPERIENCE IN INDICATOR-BASED REPORTING

Peter Bosch presented the advanced EEA experience in indicator-based reporting, from monitoring to target setting and communication with various stakeholders: environmental managers, civil society organizations or policy makers and international agencies. While indicators vary in their purpose, the following guidelines can be recommended for use in the indicator report:

- Agreement on "a story" summarized into a key message (communication goal)
- Creating a list of the most important policy questions,
- Selecting the indicators that come close to answering these questions,
- Compiling the report and assessment.

This process assists with the selection of the appropriate indicators and to validate them ex post against their design objectives. The importance of the research community in providing evidence for the links within the conceptual DPSIR (Driving forces – Pressures – State – Impacts – Responses), used in environmental reporting, was highlighted. Recently, the EEA has undertaken significant activities to ensure further streamlining and increase of the data and information quality for effective reporting on environmental measures (see the EEA technical issue report N25 at http://reports.eea.eu.int/rem/en/tab_abstract_RLR)

With regard to public health reporting, B. Cornelius-Taylor (Institute of Public Health North Rhine-Westphalia) presented the results of the evaluation in the context of an EC project within the EU Health Monitoring Programme. National and Regional Public Health Reports (PHR) were evaluated according to a number of criteria such as form, structure, comprehensiveness, conceptual approach. PHRs were compared with the expectations of policy makers to identify best practice models of effective health reporting at national and regional levels in Europe and to demonstrate the level of influence of health reports on health policy.

Results revealed heterogeneity in public health reports among different countries, ranging from a single compilation of health data or policy-related accountability reports to several different public health reports within a country. The impact of health reporting was perceived differently at the national and regional level. While national policy makers had made use of reports, regional policy makers have found that reports do not always include the issues that they need to address.

The WHO/Europe Children's Environment and Health programme and in particular, its activity on development of indicators as monitoring tools was presented. Participants emphasized the need for a better coordination of information activities between the relevant technical programmes of WHO in order to assure coherence in the indicators and to avoid duplication of efforts in data collection and reporting both at national and international level.

ON THE STRUCTURE OF THE SYSTEM FOR EH REPORTING AND INFORMATION EXCHANGE

Regular reporting on environment and health requires an effective framework for exchange of information among the relevant national agencies as well as access to the data at international level. The system should contribute to harmonizing and streamlining the international activities on policy-oriented reporting within the European Region, and at the same time provide useful tools for information processing and analysis at national level. To serve these functions, it should consist of a

data 'repository' (a place where the data are stored for use and re-use by different stakeholders) and a technical infrastructure for a network, enabling information sharing.

The EEA has proposed the development of common tools and a shared information infrastructure called "Reportnet" This aims to reduce the reporting burden and to allow for a better use and re-use of the information reported". It is envisioned that the European Environment Information System (EEIS) will improve networking with the Member States and other members of the international environmental reporting community, by using the agreed core set of indicators and underlying data-flows. This would then be implemented through the EEIS so that the countries would only report data once to their repositories, which would be accessible by institutions' networks for use and reuse. The components of the 'Reportnet' architecture are under development: it is worth mentioning the Reporting Obligations Database, a comprehensive description of all current monitoring and reporting obligations (<http://rod2.eionet.eu.int/>) and the Central Data Repository (<http://cdr.eionet.eu.int/>)

Participants agreed that repositories of environment and health data -should exist in each participating country and internationally. Countries will 'deposit' the data at the national repository, which is linked to the internationally based repository. In this way, data contained in the repositories would be available for use by national institutions and international agencies.

In addition to the EEA information infrastructure framework, there is a need for a structure that integrates health and environmental data within the national reporting system. For the core EH indicators proposed by WHO, the concept of "membranes" has been introduced whose function is to capture the data 'bursts' necessary for constructing the indicators. Participants agreed that the 'EuroIndy' software can serve as a basic technical infrastructure for a network for environmental health data exchange and specified the needs for further developments in 'EuroIndy'. While different technical solutions are feasible, the organizational aspects of maintenance and update of this infrastructure are also very important. In the long term, it will be necessary to find the institutional and human resources in order to maintain, update and further develop the database and data gathering at international level. However, the organizational aspects were considered beyond the scope of this meeting.

ON THE PRODUCTS FOR THE FOURTH MINISTERIAL CONFERENCE ON ENVIRONMENT AND HEALTH

Participants emphasized the importance of showing to the upcoming ministerial conference on environment and health (Budapest, 2004) the added value of the indicator system, both to make international comparisons and to assess the environmental health status and progress in the countries. In particular, all the countries emphasized the importance of the international comparisons to exert peer pressure on high-level policy-makers as well as for shared learning. Countries agreed that a Europe-wide synthesis report on environment and health is required to demonstrate the positive impact of implementing the indicator system developed by the WHO project. In parallel to this tangible product, assessment and reporting mechanisms will be proposed as part of the methodology. These will facilitate a coherent and standard format of communicating the evidence to decision-makers.

Participants adopted the main reporting tools allowing the most effective use of collected evidence in the process of policy analysis and environmental health decision-making.

The fact-sheet model enables the documentation of all the information and analyses for each indicator in a standard way thus allowing effective use and re-use of the information and data. The information and assessments behind an indicator can be subsequently retrieved and re-traced for re-use in different reports. The WHO proposal for an EH indicator fact-sheet model builds on the one developed and used by the EEA, which ensures harmonised reporting across the environmental and the health sectors. Participants adopted **the EH indicator fact-sheet model** of the following structure:

- Key message: a simplified description of a complex situation using the terms specified in the indicator definitions, and a brief explanation of a possible change/ or a lack of change, as demonstrated by the indicator.
- Good visualization: a graph based on comparisons or time-series (e.g. graphs). It is a necessary support of the key message. Includes indication on data quality and consistency issues.
- Specification of the policy relevance and context e.g. legislation, policy programmes etc associated with the indicator

- Assessment based on the interlinked (within the DPSEEA chain) indicators i.e. the 'story line' for a particular EH issue and the implications of the development of the indicator for public health and also for policy-makers. Indicators higher-up the DPSEEA chain provide early warning signals as well as information on the causes for the developments, the processes, which hinder / promote the attaining of targets. For the public health sector, the focus is on the environment and health context. Within the latter one may also consider vulnerable populations, such as children.
- Meta-data to document the most important points related to the data quality, reliability and completeness. These include: differences in the actual data from the WHO methodology sheets, issues related to the data collection methodology and frequency; to the data quality/ reliability (existence of QA/ QC procedures), concrete problems (e.g. change in data definition due to change from ICD-9 to ICD-10), which all affect comparability over time and/ or between regions.

Concerning **the EH indicator-based report outline**, the experts agreed that the report has a flexible content (depending on the user needs), addressing health risks with large evidence bases. It starts with a synthetic message expressing the problem and offers concise, easily understood possible solutions

The following criteria should be considered in developing a report:

- The statement of the situation formulates the problem and suggests relevant solutions in terms of the possibility to influence by active intervention.
- The evidence must be defined according to the exposure-health relationship, describing the determinants causing the problem and the link policy-exposure-health impacts.
- Methods suggested to describe the actual situation in terms of health impacts and policy include time-trends, Burden of Disease and its attributable fraction related to environmental risks, inter-country comparisons (with caution)
- The policy actions/measures and targets to be achieved according to the analysis of alternative solutions, the interpretation of trends and other countries experiences.
- Recommendations summarized at the end of the report reflect improvement as a result of the existing policies or suggest new measures.

FOLLOW-UP ACTIONS

All participating countries agreed to pilot test the proposed fact-sheet model and to create national fact-sheets with real data on selected indicators for the following themes: Air Quality, Housing and settlements and Traffic accidents, with an emphasis on exposure, health effects and actions indicators. The testing should be completed by the end of 2002 and the fact-sheets - sent to WHO for review and then the experiences shared among the Member States.

The WHO-ECEH Bonn office was requested to coordinate the analysis and the assessments for the international report. Volunteer countries will provide national case studies in addition to the international report. It was agreed that the international synthesis will be of limited scope and will focus on fewer topics depending on data availability and comparability, possibility for environment-health linkages as well as of equal importance, the priority issues of policy relevance across Europe. The final draft of the international report should be circulated within the countries for comments by 15 September 2003.

A drafting/coordination group¹ was established to work on the outline and the format of the report, including the international comparative analyses. The need for financial, technical and human resources to produce the international report was highlighted. WHO-ECEH was requested to mobilize all possible resources in order to accomplish this challenging task.

The 'EuroIndy' software will be used to exchange the collected data at national level and to be transferred at international level to the central data 'repository' i.e. the EH indicators web-forum. For

¹B. Staatsen, H.-G. Muecke, J. Jaakkola, P. Wilkinson, M. J. Carroquino, M. Krzyzanowski, D. Dalbokova

the sake of the subsequent comparisons, data must be accompanied by a report documenting, the differences in the national data collection systems from the methodology e.g. alternative definitions etc. The 'EuroIndy' will be used for this purpose. Concerning the organizational aspects, each participating country will nominate a person to act as focal point for the data collection and exchange. At international level, there is a need for technical resources to support and coordinate the integration of all the country data into the central data 'repository'. The National Institute of Environmental Health, Hungary and the National Institute for Public Health and the Environment (RIVM), the Netherlands agreed to be responsible for this on a short-term basis. The data collection will be completed and submitted to RIVM by January 2003.

Germany, Estonia, Netherlands, Lithuania, Bulgaria and Poland volunteered to provide national 'in-depth' reports by March 2004. These reports will serve the policy makers within the countries and will also be presented at the Budapest Conference in parallel to the international report. The outline of the national case studies will be discussed together with the final draft of the international report at the next meeting. The dates were tentatively determined in the second half of September 2003.

CONCLUSIONS AND RECOMMENDATIONS

- Experts from participating countries reaffirmed their continued involvement in the WHO Environmental Health Indicator Project. They committed themselves to further advance the process and to contribute to the development of the joint WHO/EEA comprehensive policy-oriented environment and health indicators system as well as to its endorsement at the Fourth Ministerial Conference on Environment and Health (Budapest, 2004). The pilot testing of the system is implemented in most of the countries: Armenia, Bulgaria, Czech Republic, Estonia, Finland, Germany, Hungary, Lithuania, the Netherlands, Poland, Romania, Slovak Republic, Spain, Sweden, Switzerland. Five of the countries completed the study; the others have nearly done so.
- Participants agreed that the 'EuroIndy' software is a useful tool for EH data collection and exchange at both national and WHO/Europe level. The project team in charge of the 'EuroIndy' development should finalize the software by the end of November 2002, so that participating countries can use it during the data collection phase. 'EuroIndy' can serve as the backbone of the system for environment and health information exchange. However, it was noted that while the technical solutions are feasible, the organizational aspects related to the software use and maintenance are of equal importance. For the latter long-term sustainable solutions should be sought both in the countries as well as in WHO-ECEH.
- Participating countries adopted the EH indicator fact-sheet model as their main reporting tool allowing for effective use and re-use of the information. They agreed to test and provide real-life examples by the end of 2002 for the indicators on air quality, traffic accidents, housing and settlements. Priority will be given to the exposure and associated health effects indicators, as well as the action indicators.
- Participants strongly supported the commitment to prepare an international indicator-based report for the Budapest Conference. It will demonstrate the usefulness of the indicators for monitoring and evaluating the ongoing policies on environment and health across Europe. To produce the report, the following tasks and responsibilities were defined:
 - A drafting group was established to agree on the topics and prepare the outline of the report.
 - Participating countries should finish the data collection by the end of 2002 and supply them to the central data 'repository'. The RIVM, Netherlands, agreed to take the responsibility for gathering and integration of the data into the central repository.
 - WHO-ECEH should coordinate the international data analyses and the synthesis. WHO-ECEH was requested to mobilize all possible resources in order to accomplish this challenging task. Additional possibilities suggested by the participants should also be pursued.
 - The international report would be finalized and discussed with all the participating countries by mid-September 2003.

- In parallel to the international EH indicator report, Bulgaria, Estonia, Germany, Lithuania, the Netherlands, Poland and possibly and also Hungary and Spain volunteered to produce in-depth (national) case reports by March 2004. The case studies will demonstrate to the national governments the 'added-value' of implementing the EH indicators system developed by the WHO project.
- Participants recommended better coordination of the information-related work among the different WHO/Europe programmes (e.g. children's health and environment, transport and health, climate change, stratospheric ozone depletion and health, etc). Stronger technical input to the EH indicators initiative was recommended to increase the use and usefulness of the system in the Member states and to avoid duplication of efforts at both national and international levels.
- Participants agreed the EH indicators web-based forum (created by the EEA) should be used as the main discussion forum and repository for the data and documents.

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ANNEX 2: LIST OF THE BACKGROUND DOCUMENTS

- Environmental health information platform for policy making: a joint WHO/EEA project proposal
- Development of environment and health indicators for the EU countries: project description
- System on environment and health information exchange: preliminary proposal
- Environmental health indicators pilot project – international data collection
- Environmental health indicators software ‘EuroIndy’ user’s manual
- Proposal for an EH Indicator-based report outline
- Proposal for an EH Indicator fact-sheet model
- Examples of EH Indicators fact-sheets:
 1. Policies to reduce environmental tobacco smoke exposure (Air_A1)
 2. Exceedance of WHO drinking water guidelines for microbiological parameters (WatSan_S2)
 3. Access to safe drinking water (WatSan_Ex1)
 4. Exposure to ambient air pollution (Air_Ex1 Ozone)
 5. Mortality from traffic accidents (Traf_E1)
 6. Rate of injuries by traffic accidents (Traf_E2)
- Additional EH indicators proposed by Sonia Kahlmeier