



# **DEVELOPMENT OF ENVIRONMENT AND HEALTH INDICATORS FOR EUROPEAN UNION COUNTRIES**

**REPORT ON WHO WORKING GROUP  
BERLIN, GERMANY  
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## ABSTRACT

The WHO - European Centre for Environment and Health is implementing a project to establish an environmental health (EH) indicator system. The system is designed to serve public health monitoring and environmental policies in Member States as well as to support multinational analyses. The methodology developed by the WHO project provides the basis for a set of core environment and health indicators for European Union (EU) countries as part of the European Community health monitoring system. An important characteristic of the proposed set is its consistency with the existing body of legislation and regulations at EU level. This Working Group was convened in the framework of the European Commission-sponsored WHO project "Development of Environment and Health Indicators for the EU countries" (ECOEHIS) to evaluate the EH indicators proposed by WHO vis-à-vis the relevant EC body of legislation. The Working Group identified a set of environment and health indicators adequate for EH monitoring in the EU, agreed on the system adjustments necessary for its harmonization with the requirements of the legislation and recommended indicators that need further methodological developments. The ECOEHIS project network was established to effectively steer the process through coordinating country activities, assuring broad discussion by the relevant stakeholders on the proposed environment and health indicators, testing for feasibility and reaching agreement on a set of 'core' indicators through consensus. The group decided on follow-up actions to further reinforce the efforts towards the establishment of European Community health information system in order to facilitate planning, monitoring and evaluation of the relevant policies.

### Keywords:

ENVIRONMENTAL HEALTH  
HEALTH STATUS INDICATORS  
ENVIRONMENTAL MONITORING - methods  
EUROPEAN UNION

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## INTRODUCTION

The WHO - European Centre for Environment and Health in collaboration with several Member States (MS) is developing and testing a pan-European Environmental Health (EH) indicator system. There is a need for a harmonised information base to evaluate and monitor public health and environmental policies. The system includes all main environmental issues that are relevant to health and on which information is useful for policy-making across Europe. The EH indicators are designed to aid monitoring public health and environmental policies in Member States as well as supporting multinational analyses. Through their built-in system of international comparisons the EH indicators enable the effects of national efforts to be compared with the situation in other participating countries. This facilitates policy evaluation and planning (see report: “Environmental health indicators for the WHO European Region. Update of methodology, May 2002”<sup>1</sup>). The indicators will form a substantial component of the Environmental Health Information System currently in preparation for endorsement at the Fourth Ministerial Conference on Environment and Health, Budapest, 2004 for implementation across Europe.

The methodology developed by the WHO project on EH indicators provides the basis for establishing a set of core environment and health indicators for EU countries to become a part of the European Community health monitoring system. An important characteristic of the proposed set is its consistency with the existing body of legislation and regulations at EU level.

In the framework of the EC-sponsored WHO project “Development of Environment and Health Indicators for EU countries” (ECOEHIS) WHO/ECEH convened this meeting in Berlin, from 14-16 May 2003. The WHO Collaborating Centre on air quality management and control in UBA (UmweltBundesAmt - the Federal Environmental Agency) hosted the meeting and the German Ministry for the Environment provided some support with a small grant. The purpose of the meeting was to review the applicability of the WHO EH Indicator core set to support policies and actions on health protection and risk prevention in the EU. The indicators were ‘screened’ vis-à-vis the existing EC body of legislation relevant to the scope of the EH indicator system. A document summarizing the relevant EC legislation and crosscheck of the core EH indicator set was prepared in advance of the meeting to provide a background for discussion. The participants of the meeting included representatives of the ECOEHIS partners as well as invited experts focusing on selected issues covered by the indicators system (see list of participants in Annex 3). Dr Brigit Staatsen chaired the meeting and D. Ormandy acted as a co-chair. Kathy Pond was the rapporteur of the meeting.

### Objectives of the Meeting

- To identify the set of environment and health indicators adequate for policy-oriented monitoring in the EU
- To agree on the adjustments of the WHO EH indicator system necessary for its harmonisation with the EC legislation and
- To recommend indicators/ priority issues that need further methodological development

The meeting established a ‘control system’ of the project, steering the development and testing the indicators for feasibility as well as assuring and providing feedback on the process from the relevant stakeholders in the participating countries.

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<sup>1</sup> [http://www.euro.who.int/EHindicators/Methodology/20030527\\_2](http://www.euro.who.int/EHindicators/Methodology/20030527_2)

## Project Implementation

The main objective of the ECOEHIS project was to develop indicators on environmental health to become part of the European Community Health Indicators (ECHI). These would serve as tools to:

- Measure the health impact of selected environmental risk factors, their determinants and trends therein throughout the Community
- Facilitate planning, monitoring and evaluation of Community programmes and actions
- Provide Member States and international organisations with information to make comparisons and evaluate their policies

Based on testing of the feasibility and usefulness and after approval by the EU Member States the indicators would be delivered according to the evidence, data and methodological limitations, in one of three categories:

- 1) ready and recommended for implementation
- 2) ready, but not feasible for immediate implementation, or
- 3) desirable though requiring further developmental work.

In addition, the project will provide input to the ECHI process of selecting core set of indicators.

The scope was set in Annex II of the decision N°1400/97/EC of the European Parliament and the Council, to adopt a programme of Community action on health monitoring within the framework for action in the field of public health i.e. to cover:

- C3. Housing conditions;
- C4. Home and leisure activities (the subset “accidents at home”)
- C5. Transport: Road accidents
- C6. External environment: air pollution, water pollution, radiation, and other types of pollution, including noise but excluding food safety

A network of national focal points was created to coordinate and assure a broad discussion of the proposed environment and health indicators system, testing for feasibility and agreement on a set of ‘core’ indicators through consensus. The national focal points were officially nominated by the participating eleven Member States.

The ECOEHIS built on the WHO EH indicators project. The methodology has been developed through intensive discussion at WHO technical meetings and consultation with participating Member States, tested for feasibility and usefulness in a national context and accepted through a broad multinational consensus (see overview at [http://www.euro.who.int/EHindicators/Methodology/20030528\\_1](http://www.euro.who.int/EHindicators/Methodology/20030528_1) ).

The WHO project identified housing, noise and transport safety indicators as being in need of further developmental work. Relevant activities are included in the ECOEHIS. The WHO/Europe housing and noise programme is responsible for development of the indicators on housing and noise, and the Public Health Agency of the Lazio Region, Italy is responsible for transport safety indicators.

As regards the compatibility of the WHO EH indicators with EC legislation, the following approach was used. The EH indicators proposed by WHO were used to identify the relevant EC legislation and then to crosscheck the reporting obligations of the legislation vs. the indicators. The obligations provided information about the mechanisms of reporting of the environmental data and also the relevant policy measures put in place by Member States to enact and comply with the EU legislation. They also provided a closer look at the mechanisms and measures precluded in the legislation to evaluate the policy effects and effectiveness. Possible future developments of the relevant legislation e.g. planned modifications were also included in the review. A document summarizing the results of the crosscheck for each EH indicator was prepared by a consultant in advance of the meeting to provide a background for discussion. Summary of the document is given in Annex 1.

The background document together with a few questions to be discussed with the relevant national agencies was distributed in advance to the national focal points. General feedback was requested on:

- an overall evaluation of the ‘compatibility’ of the EH indicator with the existing national

- legislation,
- applicability of the indicator for monitoring the implementation of environmental measures/policies and providing information on related population health impacts,
- the most relevant health- environment policy questions and public concerns in the country given the scope of the project.

## SUMMARY OF THE MEETING DISCUSSION

Discussion centred on the following issues:

- Feedback from the Member States on the WHO EH indicators: compatibility with legislation, relevance, methodological issues
- Identifying new issues/ indicators and ongoing ECOEHIS project developments
- Identification of a set of EH indicators adequate for policy-oriented monitoring in EU

Discussions on a) and b) were carried out in plenary. Small working groups were used for discussions on the set of EH indicators for the EU countries and identification of the concrete system adjustments and to some extent - for the indicators/ issues in need of further methodological developments. Further plenary discussions included progress reports and exchange of experiences from the working groups as well as final discussions on the identified EH indicators.

Three **Working Groups** were identified – based on experiences of workgroup members and interrelations of the environmental health issues:

<b>Working Group I:</b>	Health and air quality, noise and road accidents indicators
<b>Working Group II:</b>	Health – drinking and recreational water; and chemicals indicators
<b>Working Group III:</b>	Housing – health including radiation indicators

Chairperson and rapporteur were identified for each group:

➤ <b>Group I</b>	Chair: Hans-Guido Mücke;	Rapporteur: Lis Keiding
➤ <b>Group II</b>	Chair: Åsa Ahlgren;	Rapporteur: Luciana Sinisi
➤ <b>Group III</b>	Chair: David Ormandy;	Rapporteur: Øystein Solevåg

## Feedback from the Member States on EH indicators applicability and feasibility

All national focal points had engaged in useful discussion in the partner countries involving many stakeholders. They reported extensive country feedback covering the following aspects:

- Compatibility of the WHO EH indicator system with national legislation;
- Policy context and relevance of the indicator system and important EH issues of concern at national level
- Problems and needs related to the EH indicator methodology
- Data collection, information-flow systems and institutional infrastructure

Participating experts from the United Kingdom provided feedback from the country on the EH indicators in the topic areas of housing and water. Some specific comments concerning particular indicators were received from Austria, Denmark and Sweden that were taken up in the working group discussions to shape recommendations on adjustments.

Italy, Spain and Netherlands had undergone a **crosscheck of the WHO indicator system with national legislation** by verifying at first the transposition of EU directives into national legislation, and then determining if additional indicator-specific legislation existed at national level. Many of the

Directives pertaining to the indicators had been transposed or were pending transposition into Spanish legislation. With respect to the indicators where EU legislation was already in force, the indicator was also considered compatible with the Spanish legislation. Where the transposition of the legislation was pending, it is considered that the indicators would also be compatible once the legislation was in force. Concern was expressed where EU legislation did not exist, as it was considered that Spanish environmental health legislation is mainly driven by EU legislation.

In The Netherlands compliance with EC legislation was generally good except for health status indicators. Data collection and reporting focused on air pollution, living environments and transport. In Italy the compatibility of WHO EH indicators with the legislation was fairly good. Data collection and reporting on health and environment were shared among different subjects (health, statistical and environmental institutions) belonging to the National Statistical information network SISTAN. Specific laws defined reporting obligations (e.g. environmental monitoring, waste flows and policy, mortality data) as well as rules for data collection networks.

In general, country focal points reported that the WHO EH indicator system was considered **relevant and useful for national policies**. In Sweden, intensive discussion was currently underway to select indicators within the fifteen environmental quality objectives (see [www.miljomal.nu](http://www.miljomal.nu)) in order to start testing in July 2003. The Swedish proposal for environmental health indicators for the workplace, along with the environmental quality objectives included several indicators of the WHO system in particular on noise and air pollution exposure.

Health was considered very important in Sweden and nationwide surveys were used to get public opinion on health aspects. Denmark also had a high interest in health and indicators should be used to communicate the environment and health aspects, both negative and positive, to the population. Air pollution, noise and housing are priority EH issues and the Danish Environmental Protection Agency considered the WHO system potentially useful to assess how well regulations are implemented including health measures and quantification of health effects. In addition, the WHO system could serve a guideline 'catalogue of ideas' for in-depth analysis in the countries.

Austria also considered the EH indicators to be useful as information tools to communicate relevant health concerns to the public. It was important to tackle the health effects related to transport in non-urban dwellers too and not to be restricted to the urban population only.

Finland, Netherlands and Belgium viewed the WHO indicators as useful for the evaluation and monitoring of National Environmental Health Action Plans (NEHAPs) and the system covered pretty well the same areas of interest. Despite the high standards achieved in Finland in e.g. water quality and radiation safety, indoor air pollution, accidents and disasters, societal aspects of the environment and identifying deteriorating issues remained a priority. The main goals of the national action programme in the Netherlands were a healthy and safe environment, a clean and attractive living environment, integrating environmental health into urban renewal plans, development and implementation of local health and environmental plans. Both the physical and perceived quality of the living environment as well as that of the dwelling including mould and dampness, evaluation of the limit-values of indoor climate were viewed as very important EH issues in the country.

In France, the health risks and pollution surveillance system (SS) used indicators, which were very similar to the WHO-proposed indicators and were based on networks at the level of main French cities. The National Institute for Health Surveillance (InVS) was in charge of ensuring effective system implementation as a basis for policy strategies to improve poor environmental quality policies and mitigate related health risks. EH Indicators set up the information needs to enable comparability and exchange of experience. Applying the WHO system based on the DPSEEA concept would certainly increase the policy relevance of the surveillance system though quantifying the causal links in respect to driving forces and pressures. It remained an open question whether they could be successfully incorporated into the surveillance of health impacts from air pollution.

Radon was considered an important EH concern in almost all countries and indicators on exposure

already existed in Sweden and France. Additional indicators might be necessary on detection and census of contamination with ionising radiation sites.

Several countries expressed the need for more information on health effects related to the environment, e.g. asthma and allergies but in many cases it was recognised that indicators are already included in the WHO EH indicator extended set. Existing instruments for collecting the data were largely not harmonised across Europe.

Concerning **methodological issues** more health indicators were necessary in addition to the core set e.g. number of hospital admissions for respiratory/cardiovascular disease (relevant for air and noise pollution areas) to enable health impact assessments to be undertaken in The Netherlands.

The group emphasized that the indicator system should provide more information on policy effectiveness. This could be expressed inter alia, as distance to target environmental quality or exposure, as spatial/ time trends in attributed fraction/exposed in relation to development measures and other relevant policies etc. Examples of best practice of actions being taken e.g. on accident prevention, allergy prevention, drinking water management collected and disseminated on a website could usefully contribute assessment of policy effectiveness.

Feedback on **methodology for concrete indicators**:

- In respect to air and noise, freight transport should be included in the driving forces (Austria).
- The WHO-proposed indicators on housing did not comply with the EC legislation and were not very useful for the United Kingdom with a lot of data already existing to enable better information and assessments.
- In general it was felt that the drinking water indicators were not particularly applicable to the EC in their current state. The main issue was the difference in approaches between the EC regulations and the WHO Guidelines. The revised WHO Guidelines will not propose limit values for microbiological parameters but instead will promote the development of water safety plans which will be verified by microbiological values.
- The recreational water indicators were applicable to the EC but currently did not take into account the new bathing water Directive proposals.

All participating countries reported that for the majority of the WHO EH indicators reliable and good quality **data collection systems** are already in place. At the same time there was a strong opinion that use of the indicators should be based on existing data collection with a few exception on indoor air quality and chemicals where survey and bio-monitoring were needed.

In Italy, environmental monitoring relied on the environmental information system, also connected to EIONET of EEA. National environmental indicators on different issues related to WHO EH indicators, like air quality, waste, water quality were regularly reported hence great problems in collection of the required data could not be expected except for chemicals and health indicators. A compact English edition of Italian environmental indicators was also available on the web: [http://www.sinanet.apat.it/documentazione/annuario%202002/Annuario\\_Sintesi\\_Inglese.pdf](http://www.sinanet.apat.it/documentazione/annuario%202002/Annuario_Sintesi_Inglese.pdf).

There was a need to gather (and implement) the several referring institutions for issues such as housing.

In contrast to the overall feasibility, several countries indicated considerable **problems with data flows and institutional infrastructure of the information**. In France several organizations shared expertise on environmental health issues as well as responsibilities for the data sources (measurement of environmental conditions, morbidity data). These included the AFSSE, which was in charge of co-ordinating environmental health expertise but was not a data producer or centraliser and the InVS (National Institute for Health Surveillance) whose main mission was implementing surveillance of environmental health problems to support policy strategies.

In Belgium, the main difficulties were in collation and accessibility of data since the administrative power was divided between the federal state, free communities and free region. Environmental

indicators mainly depended on regions whereas health indicators - on states. In Finland much data was collected but not collated centrally. Specific problems included data collection by a large number of agencies/authorities that were not centralised, and monitoring of environmental quality outside the health sphere etc.

Due to the strong federal structure of Germany, it was difficult to collect data from the states (Länder) and therefore essential to get a general agreement on data sources. Within ECOEHIS it is equally important to strengthen the collaboration with the European Environment Agency (EEA) in order to avoid duplication of work and also to make the best use of data collected through the EEA advanced information network in health-relevant assessments. It was pointed out that, where existent, the established reporting structures should be used and that the responsibilities for analysis and reporting should be clearly assigned. Moreover questions arose over which institution could provide the technical infrastructure of the database including its maintenance and regular update and how a regular analysis of the database could be ensured. These issues should be further taken up during indicator feasibility testing.

The experiences gained during the pilot testing of the WHO Environmental Health indicators in Germany had disclosed that the indicators were especially relevant in the areas of air pollution, noise and traffic, where the evidence of health impacts was widely accepted and appropriate epidemiological measures for health impact assessment existed. In contrast, the relations between health effects of housing conditions or long-term exposure to chemicals were less well understood. The main challenges are in identifying appropriate health outcomes and epidemiological measures as well as in harmonising the methods applied.

Concerning policy evaluation it was emphasized that policy evaluation would require additional information (e.g. cost-effectiveness analysis) in order to obtain meaningful statements about certain measures taken by the Member States. Health impact assessment could serve as one of the tools for policy evaluation. The proposed action indicators could also be useful in this context, on the presumption that a standardized assessment could be established.

In respect to housing, one of the main issues highlighted by the UK expert was that different definitions existed in different organizations collecting data related to housing issues and that there was very little co-operation or co-ordination between the institutions in the UK.

## **Identifying new issues/ indicators and ongoing ECOEHIS project developments**

The ongoing developmental work on indicators for noise and housing, and transport accidents was presented.

### ***Noise***

At its last technical meeting in April 2003, the Working Group (WG) on noise agreed to consider the possibility of extending the indicator set to include assessment of cardio-vascular risk from noise pollution exposure. WHO was requested to coordinate the work on the estimates of the relative risk for cardio-vascular diseases related to noise exposure, and to provide guidelines for producing the indicator. WHO will coordinate the necessary work to review the evidence of existence of health-end points from sleep disturbance in view of the results of the latest studies.

It was desirable to have indicators to tackle other health end-points e.g. hearing impairment and effects of noise exposure on cognitive performance development in children, but this would require further developmental work. The WG proposed a highly aggregated composite noise index, which covered different noise and health aspects as well as actions to reduce and protect the population from noise exposure. Currently, preliminary testing was taking place in order to assess its significance and its representativeness. There was a need to collect success stories and good practices to be made available to MS as this was felt to be a powerful means for helping them to improve the noise

conditions to which the population is exposed.

The usefulness of such a highly aggregated index was questioned by Austria and Denmark.

## ***Housing***

The housing indicators were still in the early stages of development. The technical advisory group met from 4-6 June 2003 to discuss and further develop the indicators. The group identified the following housing-health issues which could potentially form the basis of indicators: CO & NO<sub>x</sub>; dampness & mould growth; excess winter deaths; excess high temperature; domestic water supply; housing hygiene and sanitation; housing accidents; crime & fear of crime and accessibility of housing.

Denmark, Sweden, France, Austria and the Netherlands raised concern that there was currently no indicator on radon. France pointed out that it may be difficult but it was necessary to have driving force, pressure and policy framework indicators. Domestic accidents should not be limited only to children: further work is required on data quality and comparability, and data collection practices, relying on the European work planned by DGSANCO. It was agreed that this should be discussed in the housing technical meeting. A systematic approach is required to tackle the entire issue of indoor air quality incl. environmental tobacco smoke exposure. It needs to be established whether this is included in connection with the dwelling – it is fundamental therefore to define what is the ‘house/dwelling’.

Participants raised the need to assess the effectiveness of EH control actions such as building regulations. Building regulations solved problems in new houses but it is important to look more widely than these regulations in each country. It was suggested that regulations should be looked at in terms of individual problems within countries.

## ***Road accidents***

The sub-project on road accidents had been running since February 2003 and aimed to develop a set of indicators. This formed part of the WHO EHI project to measure the phenomenon of road accidents, their determinants and their consequences on health thus facilitating an analysis of the sensitivity of specific indicators to preventive or legislative measures. This far, the relevant legislation and regulations on road traffic safety had been identified, and the indicators selected by applying the DPSEEA model to road accident /injuries cause-effect chain were being adapted and made more specific to road accidents and safety. In this respect, there was a need to collect case studies on road accidents and the potential effects of EC regulations such as driving licences, safety etc. The group will further work with all the relevant international organizations on harmonization and common definitions of ‘accidents’ and ‘injuries’. The final set of indicators will be produced by the end of 2003. The indicators will then be tested for feasibility in Member States, using the WHO methods.

It is important to include an indicator on land-use and urban planning but this also depends on the policy developments at the EU level. Access to green areas should also be included in these action indicators. It would be useful to estimate global processes e.g. effects on transport in relation to EU enlargement using the indicators.

## ***Chemicals***

Chemicals are a priority issue in need of an integrated indicator-based system for policy-oriented monitoring. Sweden for example had proposed within the non-toxic environment objective indicators on nickel allergies and bio-monitoring of cadmium. The Netherlands was considering bio-monitoring exposure to heavy metals and pesticides in the general population with a focus on children. The Danish Environmental Protection Agency stressed the need for more emphasis on collecting data on exposure to chemicals in everyday life rather than on accidents by cause, as is the current practice. Information that would allow an assessment of how well regulations are implemented including health measures and quantification of health effects is also necessary. Austria and Italy proposed to check the chemical indicators developed by Eurostat and EEA. At the same time it was recognised that

‘consumption’ and ‘use’ aspects provided rather limited information on health – environment risks, and a similar situation existed with the currently proposed indicators on waste.

The group concluded it would be difficult to provide a comprehensive information framework given the time frame of the project. For the time being it was proposed to include the ‘regulatory’ approach to tackle:

- the ability to identify fixed facilities qualifying as upper and lower tier establishments under the EU Directive 96/82/EC;
- the legal restrictions on land use planning in the safety zones, and
- the ability to maintain an active register of chemical incidents of national coverage and the government preparedness.

In the long term, monitoring of selected chemicals in the environmental media and specific measures to assess exposure in the population were recommended. “Tailor-made” monitoring should be guided by the chemical incidents register and should focus on food and water environmental media. For drinking water, monitoring of heavy metals and pesticides was strongly recommended. Specifically designed surveys are needed to assess human exposure to certain chemicals: the WHO-Euro survey on dioxins in the breast milk might serve a good example. The working groups needed to identify these and also to think about the framework for certain information.

## **Identification of the EH indicators adequate for policy-oriented monitoring in EU**

Four questions were generated to facilitate the evaluation of the indicators. They covered three interrelated arenas: public health relevance, usefulness for policy-making and applicability for policy evaluation and monitoring. The questions were:

Q1 – Are the proposed indicators useful for policy-making and environmental health monitoring in your country (are they related to priorities and actions in your country, are they of public health concern. Are they meaningful for the users)?

Q2 – Do we need additional indicators (if yes, please define)?

Q3 – Is national or EC legislation helpful in obtaining data for the proposed indicators?  
If not: what needs to be done in terms of the project (e.g. redefining indicators)?

Q4 – Are the data available for the proposed indicators? (in a general sense, this will be formally assessed in the feasibility study, including criteria for assessing data quality).

The main points of discussion held in the small working group and in plenary, and the answers to the questions are given below. An overview of the evaluation results on the four questions is given in Annex 2.

### ***Air quality, transport, noise indicators***

#### **Passenger-transport demands and modal split (Air\_D1)**

The indicator should be coded Traf\_D1 as it is not an indicator related exclusively to air pollution and should be supplemented with a Traf\_D2 to include also freight transport demands. The usefulness to include transit transport was emphasized since the associated pollution and noise is of public health relevance and some countries have a significant burden of transit transport. It was mentioned that aircraft transport might need an indicator too (starts and landings, transport of persons and of freight by aircraft).

### **Road transport fuel consumption (Air\_D2)**

This could not be considered as an air indicator, as the kind and amount of pollution from fuel burnt depends on the technique used etc. so it was proposed to call it **Traf\_D3**. Consumption of fuel is related to climate change, so – if climate change indicators are to be considered (effect-related) – it should be used and might be supplemented by an indicator on CO<sub>2</sub> (pressure-related).

### **Air Pollutant Emissions (Air\_P1)**

PM2.5 should be added, as small particles are very important in relation to health effects. The majority of the group did not agree with the aggregation of emission data, as it might be misleading and difficult to interpret. So reporting of each of the parameters in the scheme presented by the working group should be done separately. This meant six indicators (Air\_P1-P6) instead of one but not more work. CO and lead were proposed too, but to restrict the number of indicators these parameters were not included.

### **Exposure to ambient air pollutants (Air\_Ex1)**

As Black Smoke and TSP are being replaced by PM measures, it was proposed to drop BS and TSP from the indicator set, and to supplement it with PM2.5. It was found that exceedances of limit values were not necessarily the most relevant measure of health relevance. Long-term background mean levels should be used instead. The calculation of the indicator was not easy to understand. There was a wish from part of the working group not to restrict the indicator to urban areas. WHO was requested to make sure that this indicator be revisited by the experts in order to improve the methodology towards more health-relevant and understandable information. When modelling is required there should be specification of the model to be used.

For the future it is worth considering having air pollution mapping in line with noise mapping, as the data for traffic as a source could be used for both.

### **Health outcome indicators (Air\_E1, Air\_E2, Air\_E3)**

For these three indicators air pollution was regarded as being one of many risk factors, so these effects were only partly caused by air pollution. Therefore they provided important input data, but were not effect indicators. The working group found that indicators on total mortality rates were not very meaningful as they could not be interpreted in relation to air pollution on their own. As to infant mortality rate due to respiratory diseases the question was whether there are sufficient studies to calculate the fraction attributable to air pollution, indoors as well as outdoors. Regarding mortality due to respiratory diseases and to diseases of the circulatory system there is a better possibility to estimate the fractions attributable to air pollution. As there is an overweight of excess mortality from these causes among the elderly, it is desirable to have an indicator showing this aspect, such as years of life lost or reduction in life expectancy due to air pollution.

For the future an indicator on odour annoyance may be relevant and/or on odour emissions (e.g. pigs per area).

The WG discussed whether action indicators on ambient air pollution are desirable and meaningful. Thus it could be relevant to follow policies made on combating ambient air pollution. On the other hand it is seldom possible to interpret declines in air pollution as caused by single interventions. The group recommended the development of a new ambient air indicator on air quality management policies and actions to be further explored. Regarding health, the amount of emissions is the important measure and emissions reduction could be due to many different factors. It was also discussed whether the proportion of the gross product allocated to air pollution research could be a relevant indicator.

### **Policies to reduce ETS exposure (Air\_A1)**

It was proposed that this indicator on ETS be included under housing.

### **Mortality due to traffic accidents (Traf\_E1)**

It should be remembered that environmental factors formed only part of the determinants for traffic

accidents. Concerning the indicator calculation, it was proposed to restrict the denominator to residents only since it would be too difficult to include visitors. To enable inter-country comparisons the mortality statistics reported should be complemented by the definition of death due to traffic accidents used in the country. The wording 'traffic accidents' should be used consequently, as this is well defined. It was agreed that the mortality rates should be age- and gender-specific as there is, for example a remarkable rate of severe traffic accidents among young men. The years of life lost could be calculated. Also the mortality from traffic accidents should be divided into modes of traffic.

### **Injuries due to traffic accidents (Traf\_E2)**

The working group considered it important to have an indicator on injuries and clarification of the definition of 'injury' was needed. One of the problems is that policemen make subjective decisions on what was included under traffic damages as 'injuries'. There may also be cultural differences from one country to another on the threshold of involving police in traffic accidents and thus different thresholds of which injuries are registered as due to traffic accidents. There was a need for more complete data on accidents. As an example only a few European countries collect data on accidents without injuries.

There is ongoing work in the technical working group on traffic accidents so additional indicators will be proposed especially indicators on policy and also in relation to behavioural risk modifiers (e.g. cycle helmets, alcohol etc.). There could also be a need for indicators on exposure (time spent on roads, passenger x kilometre by mode of transport) too.

### **Noise annoyance and sleep disturbance (Noise\_E1 and Noise\_E2)**

Some refinement of the methodology was considered. An example was differentiation in the passenger-transport demand by cars as source of noise, to account for different type of roads (include something in between highways and urban roads: regional roads?). Further work is ongoing in the technical working group on noise indicators with a number of additional indicators proposed that would be piloted for validity.

The title of Noise\_E2 should be changed into 'Self-reported sleep disturbance by noise'.

Data availability in some countries might be a problem as surveys are not obligatory according to regulations. Concerning harmonization of the survey protocols, the recently published ISO technical specification ISO/TS 15666:2002 provides specifications for socio-acoustic surveys and social surveys on noise annoyance at home. Noise annoyance could also be estimated from noise mapping which should be ready according to the EC directive on noise in 2007, using  $L_{den}$  for annoyance and  $L_{night}$  for sleep disturbance. From a health point of view it is recommended that WHO advised the Commission to drop the lower limit of 55 db(A) for the noise mapping as part of the population was being annoyed under this limit.

Accordingly, the methodology should be modified to incorporate the noise mapping approach.

### **Policies and noise abatement measures (Noise\_A1)**

The technical working group on noise indicators was considering the development of a composite noise index as a modification of Noise\_A1 to include also other aspects. Participants recommended that the indicator should not be restricted to urban areas only. They also expressed concerns about making complicated indexes that may be difficult to communicate to policy makers and the public and requested the technical group to test carefully all the pros and cons of using such highly aggregated index. On the other hand, if the number of indicators are restricted and gave the impression of being the result of many interacting factors a composite indicator might be useful.

## ***Water and sanitation – health indicators***

There was considerable discussion regarding the water quality indicators and the need to amend these to ensure compatibility with EC regulations. When the core indicators were developed they were aimed at implementation throughout the WHO region and it was therefore considered more

appropriate to use WHO Guidelines as benchmarkers. The WHO Guidelines for Drinking Water Quality had recently been revised and the approach of monitoring microbiological quality of drinking water had been radically changed. The new approach did not set limit values, instead promoting the development of water safety plans to be verified by microbiological standards testing/audits, and independent surveillance to ensure that health based targets have been developed and met.

### **Waste Water Treatment Coverage (WatSan\_P1)**

The Austrian representative strongly recommended that the percentage of people connected to waste water treatment plants (WWT) should be expressed separately from people not connected to them and using other methods of disposal such as cesspits. The group also considered the possibility for a composite or alternative indicator that will take into account seasonal variations in population connected to WWT plant because of the extra pressure experienced in some places from tourism.

### **Exceedance of recreational water limit values for microbiological parameters (WatSan\_S1)**

There was a need to refine the methodology related to the revision of Directive 76/160/EEC to include e.g.:

- the shift from simply monitoring a bathing water towards management of a designated water.
- the introduction of risk-based monitoring frequencies.
- the new intestinal enterococci and *Escherichia coli* parameters.
- a more robust compliance assessment mechanism.
- requirements for increased availability of environmental information to the public.

### **Exceedance drinking water guidelines for microbiological parameters (WatSan\_S2)**

WHO Guidelines on Drinking Water Quality were not compatible with EC regulations. Reporting to the EU was being done based on limit values of the drinking water Directive, while under the revised WHO Guidelines there would be 'proportion of drinking water supplies compliant with water safety plans'. Accordingly, the indicator should be amended.

### **Exceedance drinking water guidelines for chemical parameters (WatSan\_S3)**

Major changes in the new WHO GDWQ will relate to categorization: new categories will be naturally occurring; agricultural activities; industry and human settlements; water treatment and distribution systems; larvacides used in water for public health; and cyanobacteria.

In conclusion, if the focus of the project was to propose indicators which must comply with EC legislation for drinking and bathing water quality it might be best to change the indicators to 'Exceedance of EC limit values for microbiological parameters for recreational waters'; 'Exceedance of EC limit values for microbiological parameters for drinking water quality' and 'Exceedance of EC limit values for chemical parameters for drinking water quality'. However, it was agreed that the approach of WHO set out in the Guidelines for Drinking water Quality and Safe Recreational Water Quality must somehow be considered in these indicators.

### **Access to safe drinking water (WatSan\_Ex1)**

Modification of the methodology is needed: to remove the term 'adequate amount of water' since it is not possible to define a minimum volume of water required for protection of health. The volume used is dependent on the level of service.

### **Access to adequate sanitation (WatSan\_Ex2)**

It was decided that this should be included in the housing – health indicators.

## ***Chemicals and health indicators***

All the indicators related to chemical emergencies as well as to waste and contaminated lands were discussed together with additional proposals received from Austria and Denmark. For example, it was

suggested that measurement of the amount of regulated chemicals could be a useful indicator. Similarly, useful information could be obtained from the trade statistics on pesticides, classified as dangerous (according to the classification systems of the EU, US or FAO, and later on the 'Globally Harmonised System for Hazard Classification and Communication').

Some questions were raised on the relevance of the existing indicators for monitoring environmental health effects. In most cases, e.g. sites containing large amount of chemicals (Seveso II directive), or the number of contaminated land sites etc, provide only a very rough indication on the potential health risks and no indication on possible risk reduction/ prevention due to active intervention (e.g. sanitated sites).

Currently there is ongoing work on indicators for contaminated land sites within the EU Soil Policy (a monitoring Directive is planned for 2004).

Given the limited time frame of the ECOEHIS project it would be difficult to find appropriate solutions for indicators to address potential health risks related to chemicals and waste. Participants recommended limiting the scope of the indicators to regulatory aspects for chemical safety and retaining the following from the existing EH indicators:

- sites containing large amount of chemicals;
- the legal restrictions on land use planning in the safety zones;
- the ability to maintain an active register of chemical incidents of national coverage, and
- government preparedness.

### ***Housing – health indicators***

Participants agreed on a more comprehensive framework to translate the evidence and knowledge on the many health – housing linkages in a meaningful and measurable way to facilitate effective monitoring of policies and evaluation of their effects on health. These should cover a wide range of hazards and potential hazards; e.g. radon, landslide, earthquakes, flooding, threats from industry, etc. The metrics will be expressed in number of dwellings exposed and mapping of the hazards (Land Use Indicator) should be considered for risk and health impact assessment purposes. Equally, indicators on policies put in place to handle the risks (in terms of e.g. 'checklists') would complement this information. The importance of including perception of the quality of housing as well as some positive aspects of it e.g. access to green areas was emphasized. The accessibility aspect could be extended to include access to schools, shops and local transport but this would depend on the definition of "housing" adopted. Participants requested the technical group on housing to work on a definition of housing to be applicable at inter-national and national scale and also to co-ordinate efforts with the traffic indicators group on the issue of accessibility. The meeting considered the following indicators for development:

- Dampness and Mould Growth – it was thought more appropriate for this to be termed 'moisture damage'
- Carbon Monoxide and Oxides of Nitrogen – consider data on gas and gas appliances
- Extremes of indoor air temperature
- Domestic water supply
- Housing hygiene and sanitation
- Housing safety and accidents
- Substandard housing – consider the possibility of providing a useful definition that would be applicable inter-nationally as well as nationally.
- Radon
- Environmental Tobacco Smoke – exposure in the home.
- Noise – from neighbours only (liase with technical group working on noise indicators).

## Follow-up actions

This first meeting of the project considered organizational and managerial aspects as well as planning and timing for the following steps in the process. Key points are outlined below.

The meeting set up a project network, to act as a project 'control system', steering the development of the indicators. Its 'core' consisted of the National Focal Points, whose active involvement is of crucial importance for the project and its relevance to the Member States. They were nominated by the Member States to advise on the indicator set (direction of development and final decision), coordination of national actions and feedback from national experts and stakeholders. The steering group should review the existing indicator set and new indicators to be proposed and would decide which indicators are relevant, and feasible. WHO was requested to inform officially the relevant institutions in the countries about the project, the national focal points and their tasks in order to facilitate the collaboration and active involvement of the various agencies.

Concerning the direction of the project, it was confirmed that Michal Krzyzanowski was the project coordinator, Dafina Dalbokova was the project manager, Xavier Bonnefoy was responsible for the work of the technical groups on housing and noise indicators and Piero Borgia – for the sub-project on road accidents. The group agreed that for better interaction with the technical groups on noise, traffic and housing indicators, all specific comments should go to the co-ordinators of the groups, keeping the project manager informed and receiving all comments about the project. Therefore, the technical groups co-ordinators would communicate their meeting results as soon as they are finalized so that the steering group could keep track and evaluate the ongoing developments. The EC requested that the chairperson of each of the technical groups invite a representative of the EC to the meetings in order to have some input into the development of the indicators.

The project is designed as an information service and should provide case studies/examples of good practice across the EC. Therefore it identifies what data already exists and what is required in the future – existing data may need to be computed in a different way but there should not be any new data collection. The next phase of the project is **feasibility testing** – identifying and contacting data providers. The national focal points network will coordinate the activities in the Member States: experience from the WHO project has shown that with good organization and using effective protocol and questionnaires the feasibility testing could be conducted with no substantial additional workload. WHO EH indicators project had developed the questionnaires, in addition limited funding is available for the technical work.

However, the indicators had to be fully defined before this process. For this purpose WHO, together with the different technical programmes e.g. on air quality, water and sanitation etc, and in collaboration with the experts in the Member States will refine the methodology based on the indicator adjustments agreed by the meeting. It was recommended that a section in the methodology sheets be included, describing the reasons for eventual redefinition. The technical groups on noise, housing, transport indicators would be sent the suggestions on additional indicators as quickly as possible to enable them to follow-up with the necessary methodological work.

Concerning the chemicals issue the meeting agreed that national focal points should discuss and report back to WHO if there is a need for new indicators.

All the documents for the next meeting e.g. indicator methodological proposals will be distributed well in advance in order to provide the national focal points enough time for feedback with national institutions/ministries and local EEA focal points.

The **next meeting** of the steering group will take place at the end of January 2004 in Luxembourg.

To improve communication a web-discussion forum for the project will be established e.g. using the CIRCA or the WHO/Europe web. The project manager will circulate earlier documents of relevance to the further development of EH-indicators and information system (e.g. questionnaire for the feasibility studies, national reports on the feasibility and usefulness of the core indicator set, reports

from working groups etc).

The meeting was also informed that, to progress with the implementation of the system, WHO, in partnership with institutions in 12 countries, had submitted a proposal to DG SANCO within the framework of the new European Community programme for action in the field of public health for a comprehensive system of environmental health information. Main tasks include further work on the indicator set, data-collection and data warehouse-development, harmonisation of instruments (e.g. surveys in collaboration with EUROSTAT), guidelines/case studies of health impact assessment and cost-benefit analysis, indicator-base policy-analyses and reporting.

In parallel to the on-going technical work, a political process has started to prepare the ground for endorsement at the upcoming Fourth Ministerial Conference on Environment and Health, Budapest, 2004, of the common information system on environmental health across Europe, which builds on the elements proposed and being tested in several WHO Member States. The steering group was invited to provide input to the preparatory political process – intergovernmental meetings involving the broadest possible representation of national decision-makers and experts, nominated by the Member States. The group was requested in parallel to participate fully in the technical work on the system needed for demonstration of its feasibility and the "value added" of its products, to facilitate internal discussion on it in the countries. The level of country involvement, expressed in the Budapest Declaration, will determine if and when the System would be established in the service of European public health.

## **CONCLUSIONS AND RECOMMENDATIONS**

➤ Participants reported feedback on the usefulness and compatibility of the WHO-proposed EH indicator system with existing national legislation and policies. They concluded that the system is relevant and useful for national policies. The participants agreed to further advance the process of indicator system refinement and to propose indicators to support policy-oriented public health reporting for national and European Community-wide implementation.

➤ The meeting agreed on a set of indicators that would enable the collection of data on health impact assessment while complying with EC legislation to aid health impact reporting. The experts identified adjustments, necessary for harmonization with the requirements of the legislation as well as indicators that needed further methodological developments. They requested WHO to coordinate the refinements of the methodology involving the experts in the Member States and the technical groups – to adjust and develop topic-specific EH indicators on road accidents, housing and noise. Participants recommended that the work be implemented and coordinated in a way, which enabled the best involvement of the Member States and their timely feedback on the process.

➤ The ECOEHIS project network was being established to provide mechanisms for the effective implementation of the project and its relevance to the MS. The involvement of the national focal points network was of crucial importance to the project in coordinating country activities related to the discussion of the proposed environment and health indicators with the relevant stakeholders, and testing for feasibility and agreement on a set of 'core' indicators through consensus. The project management was requested to provide the national focal points with the Terms of Reference, the overall project plan and time-schedule to enable them to organize the work.

➤ The next stage of the implementation is a feasibility study. The ECOEHIS meeting is to be held in Luxembourg, end January 2004 to agree on the refined EH indicator set and the protocol for testing the feasibility. WHO will officially inform the relevant institutions in the countries about the project and the national focal point tasks in order to facilitate the collaboration of the various agencies.

➤ The steering group recommended the establishment of a web discussion forum to improve communication and coordination using the CIRCA platform or WHO Euro web. This website will provide the group with access and possibilities to comment on working documents and information of relevance for the further development of EH-indicators and information system coordinator (e.g. questionnaire for the feasibility studies, national reports on the feasibility study and usefulness of the indicator set by participating in the WHO project countries).

➤ Participants noted that more efforts were needed to improve interagency cooperation and sharing of information. They recommended that WHO further strengthen the collaboration with the relevant agencies e.g. EEA and EUROSTAT to streamline current activities on policy-oriented reporting and assessments in the EU.

# ANNEX 1: SUMMARY OF THE BACKGROUND DOCUMENT AND COMPATIBILITY REVIEW

## INTRODUCTION

The WHO European Centre for Environment and Health is developing a system of indicators to support the monitoring of public health and environmental policies. When established the system will provide the Member States with appropriate information to make comparisons and support their national policies. It will also allow tracking of the progress in environment and health across Europe, and contribute to the broader objective of reporting on sustainable development. The latest proposal for WHO EH Indicators was published in May 2002.

The objective of this report is to crosscheck the applicability of the proposed WHO EH Indicators in the context of the EC body of legislation and where relevant propose necessary adjustments.

The author of the report is Øystein Peder Solevåg of Bergfald & Co as, an environmental consulting company based in Norway. The author takes sole responsibility of the content of this report.

## OVERVIEW OF EC LEGISLATION AND ORGANIZATION

### EC LEGISLATION

EC legislation consists of several levels, which are relevant to environmental health, especially:

- The Treaty on European Union
- The Treaty Establishing the European Atomic Energy Community.
- The directives and other legislative regulations regarding environmental health issues.
- The directives and other legislative regulations regarding EC statistics.

EC legislation is available on the web, in the Eur-Lex application : <http://europa.eu.int/eur-lex/en/index.html>.

It must be underlined that EC legislation is developing rapidly. This report only contains a “snap-shot” of EC legislation during the winter of 2003.

### RELEVANT EC INSTITUTIONS

The structure of the European Union is well known, with the Parliament, Council and Commission. A part of the Commission, **Eurostat – the Statistical Office of the European Communities** is developed as the Commission department responsible for carrying out the tasks devolving on the Commission as regards the production of Community statistics. Eurostat’s web page is available at <http://europa.eu.int/comm/eurostat/>

**EEA – the European Environment Agency** has as its main task to provide policy relevant environmental information for the Commission, Parliament, Member States and the population. As environmental health issues are being integrated into EC environmental policy, EEA is also providing more information on this subject. EEA's web page is found at <http://www.eea.eu.int/>.

**EFSA – the European Food Safety Authority** is being set up as the coordinating unit for food safety and food safety monitoring in the EU.

In addition several other institutions have tasks within environmental health. These are mentioned under the relevant indicator sections.

## METHODOLOGY

Starting out from the proposed WHO EH indicators, relevant EC legislation has been identified. Where possible, the legal basis of existing statistical presentations regarding the indicators published by Eurostat or EEA has been explored. The next step has been to identify proposed changes to the existing legislation.

Based on this an overview of the different indicators and their compatibility with EC legislation has been presented, and possible modifications proposed. In addition, there are some suggestions as to indicators to be included.

It is outside the scope of this report to consider the wider policy relevance of each indicator. In some cases, however, the author has highlighted this aspect.

#### FORMAT OF RESULTS PRESENTATION

The proposed core indicators and their compatibility are presented in the same order as in the WHO report of May 2002. Each indicator is presented with the same sub-headings including:

- Explanation to the indicator: taken from the WHO report of May 2002.
- Relation to the EC legislation: the name of the relevant EC legislation, and in some cases also a short presentation of the legislation.
- Reporting obligations to the legislation: overview of the reporting obligations within the legislation mentioned above using the following typology:

<i>Legal transposition</i>	Details on how Member States' national laws should be designed to enact EU legislation
<i>Practical compliance</i>	Data on exceedances of environmental standards, limit values, national derogations, interval of reporting, start of reporting etc.
<i>Environmental data</i>	Data on environmental pressures and state of the environment;
<i>Descriptions of policy measures</i>	Plans, programmes, instruments put in place by Member States to comply with EU legislation;
<i>Policy effects and effectiveness</i>	The effects of these measures and the extent to which they achieve their objectives.

- Planned modifications in legislation: where applicable, a presentation of proposed EC legislation
- Need for modification in indicator: the compatibility between the proposed WHO EH Indicator and EC legislation is determined. In some cases proposals for changes in the proposed WHO EH Indicators as well as for new indicators are given.
- References: references to relevant EU legislation, and publications from EU.

#### RESULTS OF THE CROSSCHECK

Summarized in the following table 1. The difference between the column "Not compliant to existing EC legislation" and the column "Outside the scope of EC legislation" could briefly be described like this:

- **Not compliant to existing EC legislation:** EC legislation covering the subject exists, but the proposed EH indicator is not in compliance with the legislation.
- **Outside the scope of EC legislation:** There is no EC legislation covering the scope of the proposed EH indicator.

In some cases, indicators are collected by other international organizations than EU, like WHO, OECD or UN ECE. It has been outside the scope of this report to investigate these reporting obligations further.

**Table 1: Summary results of the crosscheck for compatibility**

Proposed EH Indicator		Compliant to existing EC legislation	Not compliant to existing EC legislation	Outside the scope of EC legislation	Discussed separately
Air_D1*	Passenger transport demand by mode of transport		X		
Air_D2*	Road transport fuel consumption	?			
Air_P1*	Emissions of air pollutants	X			
Air_Ex1*	Exposure to ambient air pollutants (urban)		X		
Air_E1*	Infant mortality due to respiratory diseases			X	
Air_E2*	Mortality due to respiratory diseases			X	
Air_E3*	Mortality due to diseases of the circulatory system			X	
Air_A1*	Policies to reduce environmental tobacco smoke exposure	?			X
Hous_S1*	Living floor area per person			X	
Hous_Ex1*	Population living in substandard housing			X	
Hous_E1*	Mortality due to external causes in children under 5 years of age		X		
Hous_A1*	Scope and application of building regulations for housing		X		
Hous_A2*	Land use and urban planning regulations		X		X
Traf_E1*	Mortality from traffic accidents	X			
Traf_E2*	Rate of injuries by traffic accidents	X			
Noise_E1*	Population annoyance by certain sources of noise	X			
Noise_E2*	Sleep disturbance by noise		X		
Noise_A1*	Application of regulations, restrictions and noise abatement measures	X			
Waste_P1	Hazardous waste generation	X			X
Waste_S1	Contaminated land sites			X	X
Waste_A1	Hazardous waste policies	X			
Rad_E1*	Incidence of skin cancer			X	
Rad_A2*	Effective environmental monitoring of radiation activity	X			
WatSan_P1*	Waste water treatment coverage	X			
WatSan_S1*	Exceedance of recreational water limit values for microbiological parameters	X			
WatSan_S2*	Exceedance of WHO drinking water guidelines for microbiological parameters	X			
WatSan_S3*	Exceedance of WHO drinking water guidelines for chemical parameters		X		
WatSan_Ex1*	Access to safe drinking water			X	
WatSan_Ex2*	Access to adequate sanitation			X	
WatSan_E1*	Outbreaks of water-borne diseases			X	
WatSan_E2*	Diarrhoea morbidity in children			X	
WatSan_A1*	Effective monitoring of recreational water		X		
Food_Ex1	Monitoring chemical hazards in food: potential exposure	?			X
Food_E1	Outbreaks of food-borne illness	?			X
Food_E2	Incidence of food-borne illness	?			X
Food_A1	General food safety policy	?			X
Food_A2	Effectiveness of food safety controls		X		X

Proposed EH Indicator		Compliant to existing EC legislation	Not compliant to existing EC legislation	Outside the scope of EC legislation	Discussed separately
Chem_P1*	Sites containing large quantities of chemicals	X			
Chem_E1*	Mortality from chemical incidents	?			X
Chem_A1*	Regulatory requirements for land-use planning	X			
Chem_A2*	Chemical incidents register	?			X
Chem_A3*	Poison centre service			X	
Chem_A4*	Medical treatment guidelines			X	
Chem_A5*	Government preparedness	X			
Work_E1	Occupational fatality rate	X			
Work_E2	Rates of injuries	X			
Work_E3	Sickness absence rate			X	
Work_A1	Statutory reports of occupational diseases	X			

NOTE: \* scope of the ECOEHIS project

## PROPOSAL FOR TOPICS TO BE FURTHER EXPLORED

### ENVIRONMENTAL TOBACCO SMOKE (ETS)

EC legislation is now being developed on protection of the population against ETS. The task of developing policy relevant EH indicators on exposure as well as the effectiveness of policies European countries chose to implement in their fight against tobacco is an area where WHO and EU should work closely together.

### LAND USE AND URBAN PLANNING

The specific regulations for building permits etc. are national legislation within EU. However, EC legislation on environmental impact assessments, both on a project level (EIA) and on a strategic level (SEA), has increasing impact in Member States. At the same time, WHO is working to integrate health issues into both EIA and SEA. The need to develop indicators to describe more closely the actual integration of health issues into impact assessments should be explored.

### FOOD SAFETY

With the setting up of the European Food Safety Authority, the responsibility for the task of developing indicators to describe the actual development within EU Food Safety is clearly pointed out. This is an area where there are excellent opportunities for close cooperation between WHO and EU, as WHO is already closely involved in this subject, for instance through Codex alimentarius.

### CHEMICALS AND HEALTH

EC legislation on chemicals is being revised at the moment. There is a development where the former product orientated strategy, e.g. classification of each chemical, and accident orientated strategy, e.g. the Seveso regulations, are being supplemented with a risk oriented strategy, where the impact of chemicals on the population and groups at risk, as well as on the environment, is becoming the focus. Thus, there is also a need to develop new, environmental health based indicators.

## ADDITIONAL PROPOSAL FOR SOCIAL COHESION INDICATORS

Eurostat collects indicators on Social Cohesion among Member States. These indicators should be considered for implementation in the Environmental health indicator system of WHO, as social factors are important to health, and not thoroughly covered in the core indicators.

### INEQUALITY OF INCOME DISTRIBUTION

#### AT-RISK-OF-POVERTY-RATE

- Risk-of-poverty rate is defined as the share of persons with an equalised disposable income below the risk-of-poverty threshold, which is set at 60% of the national median equalised disposable income (after social transfers). This share is calculated before social transfers (original income including pensions but excluding all other social transfers) and after social transfers (total income).

#### AT-PERSISTENT-RISK-OF-POVERTY RATE

- Persistent-risk-of-poverty rate is defined as the share of persons with an equalised disposable income below the risk-of-poverty threshold in the current year and in at least two of the preceding three years. The threshold is set at 60% of the national median equalised disposable income.

REGIONAL COHESION Coefficient of variation of employment rates across regions

#### EARLY SCHOOL-LEAVERS NOT IN FURTHER EDUCATION OR TRAINING

- **Early school leavers** refers to persons aged 18 to 24 in the following two conditions: the highest level of education or training attained is ISCED 0, 1 or 2 and respondents declared not having received any education or training in the four weeks preceding the survey (numerator). The denominator consists in the total population of the same age group, excluding no answers to the questions 'highest level of education or training attained' and 'participation to education and training'.

#### LONG-TERM UNEMPLOYMENT RATE

Unemployed persons are those aged at least 15 years not living in collective households who are without work within the next two weeks, are available to start work within the next two weeks and who are seeking work (have actively sought employment at some time during the previous four weeks or are not seeking a job because have already found a job to start later). The total active population (labour

force) is the total number of the employed and unemployed population. The duration of unemployment is defined as the duration of a search for a job or as the length of the period since the last job was held (if this period is shorter than the duration of search for a job).

#### POPULATION IN JOBLESS HOUSEHOLDS

- Persons aged 0-60
- Persons aged 0-65

Population living in **jobless households** is calculated by dividing the number of persons aged 0-65 (and additionally 0-60) living in households where none is working out of the persons living in eligible households. Eligible households are all except those where everybody falls in one of these categories:

- aged less than 18 years old
- aged 18-24 in education and inactive
- aged 65 (60) and over and not working

More information on these indicators is available at

<http://europa.eu.int/comm/eurostat/newcronos/info/notmeth/en/theme1/strind/socohe.htm>.

## ANNEX 2: OVERVIEW OF THE WHO EH INDICATOR EVALUATION

### Formulation of the questions:

**Q1** – Are the proposed indicators useful for policy-making and environmental health monitoring in your country (is it related to priorities and actions in your country, is it of public health concern. Are they meaningful for the users)?

**Q2** – Do we need additional indicators (if yes, please define).

**Q3** – Is national or EC legislation helpful to obtain data for the proposed indicators?  
If not: what needs to be done in terms of the project (eg, redefining indicators)?

**Q4** – Are the data available for the proposed indicators? (in a general sense, this will be formally assessed in the feasibility study, including criteria for assessing data quality).

The answers to the questions for individual indicators are summarized below:

	Q1	Q2	Q3	Q4
<b>Air_D1</b>	Yes	Yes		
		Traf-D1 (passenger)	Yes	(Yes)
		Traf-D2 (freight)	Yes	(Yes)
		<i>Under discussion: aircraft; trespassing traffic</i>		
<b>Air_D2</b>	Yes	Yes		
		Traf-D3	Yes	Yes
		<i>Or</i>		
		Clim	Yes	Yes
		<i>If climate change indicators are considered (effect related); CO<sub>2</sub> indicator (pressure –related)</i>		
<b>Air_P1</b>	Yes	Yes		
		Air_P1 (SO <sub>2</sub> )	Yes	Yes
		Air_P2 (NO <sub>x</sub> )	Yes	Yes
		Air_P3 (NH <sub>3</sub> )	Yes	Yes
		Air_P4 (NMVOC)	Yes	Yes
		Air_P5 (Prim PM <sub>10</sub> )	Yes	Yes
		Air_P6 (Prim PM <sub>2.5</sub> )	NEW	Yes
		<i>General discussion on use of indexes needed.</i>		
<b>Air_Ex1</b>	No	Yes		
		<b><i>Back to experts!</i></b> Better indicator as to health relevance. Currently not understandable, new proposal should drop BS and TSP and add PM <sub>2.5</sub> , and consider not only urban people. For the future: air pollution mapping in line with noise mapping.		

<b>Air_E1</b>	No			
<b>Air_E2</b>	No	Yes		
<b>Air_E3</b>	No	Yes		

*Note: The three provide important input data, but are not effect indicators. New indicator specifically related to air pollution, Years Life Lost, reduction of life expectancy (AP attributable fraction). For the future: odour indicators.*

	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Q4</b>
<b>Air_A1</b>		Yes		
		<i>Development of a new ambient air indicator. Action/policies on ETS move to WGIII (Housing).</i>		
<b>Traf_E1</b>	Yes	No	Yes	Yes
		<i>Age and gender specific, divided into modes of traffic. Too difficult to include visitors, measure total residents only.</i>		
<b>Traf_E2</b>	Yes	Yes		
		<i>Modifications of the indicator needed: better definition of injury. Collection of more complete data on accidents. Ongoing work of the working group on new indicators (D, P, Ex, A).</i>		
<b>Noise_E1</b>	Yes	Yes	No	No
		<i>Modification of methodology needed. Use <math>L_{den}</math> noise maps to estimate noise annoyance. Drop lower limit (<math>L_{den} = 55</math>)</i>		
<b>Noise_E2</b>	Yes	Yes	No	No
		<i>Additional indicators are needed – task of the technical group! Surveys are not obligatory; need for harmonisation, some countries have no data. Use <math>L_{night}</math> noise maps for estimate of sleep disturbance. Drop lower limit.</i>		
<b>Noise_A1</b>	No	No	Yes	
		<i>Ongoing work on development of Noise Composite Index. Noise technical group to consider that indicators measure not only urban people; also the pros and cons of such composite indicators.</i>		
<b>WatSan_P1</b>	Yes	Yes	Yes	Yes
		<i>Need to be refined to distinguish clearly people connected to waste water treatment plants separately from people not connected to those and using the other ways of disposal</i>		
<b>WatSan_S1</b>	Yes	Yes	No	Yes
		<i>Modification to reflect the EC Directive 76/160/EEC (revision in progress, proposal adopted October 2002: COM(2002)581)</i>		
<b>WatSan_S2</b>	Yes	Yes	Yes	Yes
		<i>Rename the indicator: Exceedance according to EC Water Framework Directive EC 200/60/CE</i>		
<b>WatSan_S3</b>	Yes	Yes	Yes	Yes
		<i>Rename the indicators as above; refinement to distinguish organics and inorganics</i>		

	Q1	Q2	Q3	Q4
<b>WatSan_Ex1</b>	Yes	Yes	No	
<b>WatSan_E1</b>	Yes	Yes	Yes	Yes
		<i>Refinement according to revised notification system; include also Legionellosis</i>		
	<i>NB: EU notification system has to be improved!</i>			
<b>Chem_P1</b>	Yes	Yes	Yes	Yes
	<i>Rename: Industrial facilities registered under the SEVESO II Directive</i>			
<b>Chem_A1</b>	Yes	Yes	Yes	Yes
<b>Chem_A2</b>	Yes	Yes	Yes	Yes
<b>Chem_A5</b>	Yes	Yes	Yes	Yes
	<i>Refinement to complement by frequency of exercises in handling accidents.</i>			
<b>Rad_E1</b>	Yes	Yes	No	??
	<i>Check if data on one cancer (melanoma) sufficient to infer/extrapolate incidence of others.</i>			
<b>Rad_A2</b>	Yes	Yes	Yes	Yes

### **Additional indicators to be considered by the Housing-Health Group**

**Radon** – Two types of Indicators – Exposure and Action; consider reporting requirements and surveys for exposure

**Dampness** –termed Moisture Damage.

**Access to Green Areas**

**Home Accidents** – Include accidents resulting in death separate data collected).

**Environmental Tobacco Smoke** – Exposure in the home.

**Noise** – From neighbours only (liase with Noise Group).

**NOX and CO**

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