



# **Summary overview of the environment and health performance reviews for Estonia, Lithuania, Malta, Poland, Serbia and Slovakia**

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EUROPE

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and health performance reviews for  
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## ABSTRACT

This report maps and conveys a clear picture of the current environment and health situation in six countries of the WHO European Region. It evaluates strong and weak points of environmental and health status and provides recommendations from independent experts on the key areas that could be considered for improvement, giving information on policy progress and assessing the effectiveness of selected policies. It summarizes the findings of the national environment and health performance reviews undertaken in Estonia, Lithuania, Malta, Poland, Serbia and Slovakia.

The WHO Regional Office for Europe developed this project to follow up the commitments made by Member States at the Fourth Ministerial Conference on Environment and Health in Budapest in June 2004 to reduce children's exposure to environmental hazards. The project was designed to provide the evidence base for developing and implementing such action. The environment and health performance reviews are country-based interdisciplinary assessments Regional Office carries out at the request of Member States. Through the environment and health performance reviews, Member States receive support in reforming and upgrading the overall public health system.

### Keywords

ENVIRONMENTAL HEALTH  
HEALTH STATUS INDICATORS  
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## Abbreviations

EHPR	environment and health performance review
ENHIS	European Environment and Health Information System
EU	European Union
NEHAP	national environment and health action plan
NGO	nongovernmental organization
OECD	Organisation for Economic Co-operation and Development
PM	particulate matter
PM <sub>2.5</sub>	particulate matter with an aerodynamic diameter of less than 2.5 µm
PM <sub>10</sub>	particulate matter with an aerodynamic diameter of less than 10 µm
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals
WHO	World Health Organization

## Foreword

The purpose of this report is to map and convey a clear picture of the current environment and health situation in six countries of the WHO European Region. It evaluates the strong and weak points of environmental and health status and provides recommendations from independent experts on the key areas that could be considered for improvement, giving information on policy progress and assessing the effectiveness of selected policies. It summarizes the findings of the national reviews undertaken in Estonia, Lithuania, Malta, Poland, Serbia and Slovakia.

The process of preparation preparing the environment and health performance reviews (EHPR) began in June 2006. The evaluation missions in the six countries took place from April 2007 to May 2009. During these field visits, teams consisting of two or three environment and health experts met with representatives from various institutions involved in environment and health. Additional information was collected from national counterparts as needed in preparing and finalizing the reports.

The environment and health performance reviews were carried out with the support of all national counterparts of environment and health and the ministries responsible for health in the countries. Thanks to their strong support, the national visits and workshop could be arranged and background information and all other necessary information could be collected. We are very grateful to all national specialists and experts who shared their knowledge about environment and health in their country.

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## **Executive summary: main conclusions and recommendations**

This report summarizes the principal features and priorities of the environment and health performance reviews (EHPRs) for Estonia, Lithuania, Malta, Poland, Serbia and Slovakia, providing an outline assessment of key similarities and differences as revealed in the six national reports. It compares information for each country relating to: key national health characteristics; key effects on children; environment and health priorities; institutional set-up; legal framework (including “soft” laws); intersectoral collaboration; and tools for action.

### **Key national health characteristics**

In the six countries, life expectancy at birth ranges from 65.0 years (Lithuania) to 77.7 years (Malta) for men and from 76.0 years (Serbia) to 82.3 years (Malta) for women. Infant mortality ranges from 5.0 (Estonia) to 6.7 (Serbia) per 1000 live births, and for all countries is higher than the European Union (EU) average of 4.6. The major cause of death in all countries is cardiovascular disease, accounting for between 41% (Malta) and 55% (Slovakia) of all deaths. The second most prevalent cause of death in all countries is cancer. The WHO estimates of the burden of disease from environmental risk factors range from 14% in Malta to 27% in Serbia and Montenegro.

### **Key effects on children**

Child mortality due to road accidents is a concern in most countries and is particularly high in Lithuania. Child mortality from (other) unintentional accidents is a particular concern in Estonia and Lithuania. The mortality rate of children younger than five years in Lithuania is the highest of all the EU countries. In Slovakia, infant mortality resulting from respiratory disease is particularly high.

Lithuania has a particular problem with alcohol intoxication among young people, and in Serbia, schoolchildren appear to be at particular risk from problems associated with water and sanitation. Malta has the highest prevalence of obese and overweight children in the WHO European Region, with almost one third of 13-year-olds reported to be overweight or obese. Exposure of children aged 13–15 years to environmental tobacco smoke at home is particularly high in Estonia, Poland, Serbia and Slovakia.

### **Environment and health priorities**

Water and sanitation are identified as a priority in all six countries, particularly in Serbia. All countries except Malta identify the provision of safe drinking-water and sanitation in rural areas as a problem. Contaminated groundwater in rural areas (and compromised water quality more generally) is considered a particular issue in Lithuania. Nitrate contamination of drinking-water is a concern in Lithuania and Malta. Compliance with bathing water quality standards is particularly problematic in Poland.

Unintentional injuries (especially among children) are considered a priority in all six countries, particularly in Estonia, Lithuania and Malta. The EHPRs for Estonia and Malta highlight a particular need for efforts to develop and implement policies for preventing home and leisure accidents and injuries. In Malta, improving workers' health and safety is also a priority.

Air pollution is identified as a priority in all countries. In Lithuania, more than 97% of the urban population is exposed to particulate matter levels exceeding the WHO guidelines. Rising ambient ozone concentrations and increasing emissions of greenhouse gases are considered a particular problem in Malta. Lead pollution from the continued use of leaded fuels is a concern in Serbia, and several countries identified the problem of increasing numbers of cars, many of them old. Exposure of children to environmental tobacco smoke at home is particularly high in Estonia, Poland, Poland, Serbia and Slovakia. Dampness in the housing stock is considered a particular problem in Lithuania. Malta has an above-average prevalence of asthma, and the EHPR highlights the need for analysing trends in indoor air pollution in schools.

In addition, Slovakia's EHPR identifies chemicals and heavy metals from landfill sites as a particular environment and health priority, and Serbia includes hazardous waste, landfill sites, industrial hotspots and occupational accidents as priority issues. In Lithuania, the illegal dumping of waste is considered a threat to public health, and noise is also an increasing concern.

In Estonia and Lithuania, inadequate health and environment information is considered to hinder the identification and analysis of priorities and the development of relevant policies. The EHPRs for several of the countries emphasize the need for reliable data and the importance of using standardized practical tools, such as the European Environment and Health Information System (ENHIS), for collecting information and setting priorities. The EHPRs of most countries mention that preventive policies to reduce environment and health risks are often not considered a public health priority and that the focus frequently remains on health care. Serbia's EHPR specifically identifies the need for greater political will to meet the commitments of the Children's Environment and Health Action Plan for Europe and other requirements for effective monitoring and sustainable health interventions.

## **Institutional set-up**

All six countries have a health ministry that takes primary responsibility for health and health-related issues (Estonia's is the Ministry of Social Affairs and Malta's the Ministry for Social Policy, Health, the Elderly and Community Care). All countries also have an environment ministry and/or an environment inspectorate or agency that links with the health ministry in dealing with health and environment issues.

Most countries have a dedicated department and/or institute of public health and associated public health laboratories. Slovakia has a specific Department of Environment and Health (part of the Public Health Authority), and Malta similarly has a newly created Department for Environmental Health under the Ministry for Social Policy, Health, the Elderly and Community Care. Most countries, however, do not have a department or unit dedicated to environmental health or environment and health; in Serbia, environment and health was first recognized as a distinct topic area in 2009 by the Public Health Law.

In addition, the countries have a plethora of other ministries, institutions and organizations involved in environment and health policies, procedures and processes. Structures and organizational details can vary considerably between countries. Lithuania's EHPR specifically highlights how the complexity of the organizational framework may lead to overlaps and problems in implementing environment and health activities and programmes and emphasizes how the institutional set-up may not be fully conducive to intersectoral collaboration. Serbia's and Lithuania's EHPRs both suggest that health arguments could be used more effectively for environmental protection.

Nongovernmental organizations (NGOs) play a role in most countries, and children are often the focus of their advocacy efforts. However, few (or none) are dedicated specifically to environment and health issues. The EHPRs recommend that NGOs be an integral part of intersectoral committees dealing with environment and health issues; for all countries, it is suggested that NGOs be part of the decision-making processes.

For several countries, the EHPR highlights the problem of understaffing and/or the lack of suitably qualified personnel in environment and health. Serbia's EHPR recommends including environment and health as a distinct discipline in the education and training of health and environment professionals, and Poland's, Serbia's and Slovakia's EHPRs advocate improved and stable employment opportunities for environment and health practitioners. In several countries, the awareness of physicians (general practitioners) and their role in the environment and health process appears to be unclear or suboptimal, especially considering their key interface with the general public.

## **Legal framework**

Most countries have a public health act (or the like) that is the main law relevant to environment and health. Supplementary to this, most countries have regulations covering transport, food safety, consumer goods, planning and construction, occupational health and environmental protection that pertain to environment and health issues and concerns. Laws on environmental protection play an important role in relation to environment and health in all countries, although the relationship between environment and health is not always made explicit or directly tackled.

The EHPRs refer to EU directives, norms, standards and procedures in relation to national laws on environment and health, and many relevant legal instruments have been developed based on EU legislation. In Serbia, particular efforts are being made to align new laws with EU directives and their principles. Committing resources to transposing EU directives and priorities may adversely affect efforts for national priority-setting.

The national environment and health action plans (NEHAPs) and children's environment and health action plans (and similar nationally focused public health plans and programmes) are considered valuable instruments for directing and driving environment and health priorities in all countries, although some countries have not yet fully developed and/or implemented them. In Malta, the recently approved NEHAP has been an influential tool in shaping environment and health responsibilities. Many countries have additional specific strategies directed at improving health through lifestyle changes and reducing or preventing injuries, cancer and cardiovascular disease. In most countries, children are an identified target for health protection and improvement programmes, and in some countries (such as Slovakia) public health legislation specifically targets children.

The lack of money and/or systems for efficiently allocating money to environment and health activities is an issue identified in all countries; in Estonia and Lithuania it is regarded as one of the greatest challenges.

Cost–benefit analysis is considered an important tool, and Estonia’s and Lithuania’s EHPRs both advocate using and evaluating the experience of this approach in other countries. Lithuania’s EHPR recommends developing and applying appropriate economic instruments to strengthen environment and health initiatives and developing research and transferring knowledge on the economic effects of environment and health risks and the cost–effectiveness of policies.

Estonia is said to have no clear strategy on environment and health, and this also appears to be the case in Lithuania, despite the requirements of public health law. Estonia’s EHPR also indicates that the health costs of environmental pollution are not sufficiently integrated into policy-making due to the lack of reliable data. Adequate and effective enforcement of policies related to environment and health has been identified in Lithuania, for example. Serbia’s EHPR calls for a NEHAP and a children’s environment and health action plan to be developed with the inclusion of appropriate legal, organizational and financial mechanisms and similarly recommends strengthening the capacity of legislation and enforcement in environment and health policies. Malta’s EHPR proposes that policy documents have an appropriate implementation structure to transform them into action. It is recommended that NEHAPs and other such tools always include evaluation mechanisms.

Most countries have policies and/or legislation on smoking in the workplace and in public places, but policies aimed at reducing exposure to environmental tobacco smoke in the home are limited. Activities aimed at raising public awareness about environmental tobacco smoke in the home are recommended.

Malta’s EHPR recognizes a particular need for an overall national policy on preventing injuries and identifies deficiencies in identifying health effects in the environmental impact assessment process. This is almost certainly a problem in all countries. Slovakia shows an example of good practice; the environment ministry has very good experience in environmental impact assessment and helps the health sector in elaborating the health elements of the environmental impact assessment.

## **Intersectoral collaboration**

All six countries’ EHPRs highlight the importance of and need for intersectoral collaboration in developing and applying environment and health policies and legislation, but most accept that this is frequently suboptimal, usually because not all relevant players are appropriately and actively engaged. The importance of involving the economic and finance sectors is frequently raised.

Particular successes have been identified (such as in Serbia) in developing and delivering health promotion campaigns. In Lithuania, the public health infrastructure of the municipal public health bureaus creates particularly good opportunities for enhanced collaboration on environment and health at the local level. The EHPRs for several countries identify the important part played by NEHAPs and children’s environment and health action plans and similar national health plans and programmes in fostering collaboration between relevant

departments and with external stakeholders, but the communication of data between government institutions and to the public is often deficient.

In several countries, intersectoral cooperation seems to be more efficient at the local or county level, and the role and involvement of NGOs is generally regarded as weak. Estonia's EHPR identifies the need for better streamlining of the responsibilities, accountability and representation of the various sectors and calls for NGOs to be systematically included in the policy-making process. Similarly, Lithuania's EHPR notes that cooperation with NGOs, or the public more generally, is not taking place systematically in environment and health. Poland's EHPR calls for establishing clearer responsibilities and improving the dialogue between sectors (with funding schemes attached to the activities). Serbia lacks a coordinated communication strategy, and dissemination of data and reporting between all levels are inadequate. In Slovakia, cooperation at the regional level particularly needs to be improved.

### **Tools for action**

Monitoring is considered extremely important, and all six countries undertake it to different degrees. For example, Slovakia's EHPR identifies the need for homogeneous data collection and processing protocols and procedures and proper communication of information to the public. Even where environment and health information is extensive and accessible, it is often deemed not to be effectively used to protect the public health. Lithuania's EHPR recommends establishing a national list of priority environment and health parameters with the collaboration and involvement of all stakeholders and in parallel with developing appropriate regulatory mechanisms.

Monitoring activities tend to focus on living and working environments and on collecting general health statistics. The environmental media most frequently monitored are air and water. Some countries have formalized, regular national health surveys, although the degree to which these include environmental determinants of health varies. In other countries, the formal reporting of standardized data is irregular or absent, and the routine collection of even basic data may not yet be well established. Estonia and Lithuania, for example, lack a central registry for accident and injury data, and these countries' EHPRs include a recommendation for enhanced injury surveillance, monitoring and evaluation. Malta's report similarly recommends that greater attention be placed on national surveillance of injuries and on collecting baseline data for establishing evidence-based interventions. Poland has no reliable countrywide surveillance of injuries or other environmentally related diseases and conditions.

Indoor air quality is rarely measured and assessed, although some countries (such as Malta) have indoor monitoring programmes or projects focused on schools. Several countries consider ENHIS to be a key driving force for analysing the national environment and health situation, and Poland's and Serbia's EHPRs recommend further developing and implementing ENHIS. Several of the EHPRs note the general lack of combined health and environment data.

Environmental impact assessment is more or less institutionalized in all countries, but the requirement for and performance of health impact assessment is generally less formalized. Several EHPRs highlight the need for further developing health impact assessment tools and methods.

With regard to capacity-building, most of the EHPRs emphasize the lack or inadequacy of the education and training of environment and health professionals and the general paucity of environment and health expertise. Lithuania's and Slovakia's EHPRs suggest that training of public health professionals be extended to include physicians. In Serbia, the lack of equipment and facility capacity is highlighted.

Many of the EHPRs note deficiencies in communicating with the public. Lithuania's EHPR recommends that information provided to the public be strengthened to increase public interest and involvement and that better partnerships be established for improving communication. Malta's EHPR makes several recommendations on the standardized collection and reporting of data and disseminating them to the public. Poland's and Serbia's EHPRs also note the general lack of public awareness of environment and health risk factors and recommend public awareness-raising together with more strongly encouraging public participation.

# 1 Introduction

## Background

Preventing disease and injury is at the heart of public health and health systems. Within the political and institutional framework of each country, a health system is the ensemble of all public and private organizations, institutions and resources mandated to improve, maintain and restore health. Health systems encompass both personal and population services as well as activities to influence the policies and actions of other sectors to address the social, environmental and economic determinants of health (1). The environment is responsible for as much as 20% of the total burden of disease (2,3).

Environment and health comprises the aspects of human health and disease that are determined by factors in the environment. It also refers to the theory and practice of assessing and controlling factors in the environment that can potentially affect health. According to the definition used by the WHO Regional Office for Europe, environment and health includes both the direct pathological effects of chemicals, radiation and some biological agents and the effects (often indirect) on health and well-being of the broad physical, psychological, social and aesthetic environment (4). In this report, the relationship between environment and health covers all human health issues that are related to environmental factors and all environmental factors that may (possibly) affect health – either negatively or positively.

In 1989, the WHO Regional Office for Europe launched the environment and health process through a series of ministerial conferences with the aim of eliminating the most significant environmental threats to health as rapidly as possible, based on the premise that prevention is better than cure.

Environment and health issues are essentially intersectoral, and human health can only be protected from the risks posed by a hazardous or contaminated environment through the coordinated input of different sectors and greater capacity on the part of the health sector to enlist the support of these actors to develop a high level of targeted activities and to ensure consistency and synergy with other relevant commitments made by Member States (5,6).<sup>1</sup> The ministers attending the Second Ministerial Conference on Environment and Health in Helsinki (7) recognized the importance of coordinated input from different sectors and endorsed this in the commitments of the Environment and Health Action Plan for Europe. This plan called for the development of national environment and health action plans (NEHAPs). The theme of the Third Ministerial Conference on Environment and Health in London in 1999, Action in Partnership (8), continued to promote this key message and relevant commitments. Following the Fourth Ministerial Conference on Environment and Health in Budapest in June 2004, the Member States refined their action plans to

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<sup>1</sup> The Budapest Declaration (6):

- recognizes “the relevance of national environment and health action plans (NEHAPs)... and commends the continuing efforts to implement and evaluate them” (paragraph 6);
- calls on organizations to establish mechanisms “for coordinating technical and financial assistance to the newly independent states and countries of south-eastern Europe, in order to stimulate legislative and institutional reforms, strengthen countries’ capacities and effectively reduce exposures to environmental hazards and their health impacts” (paragraph 20c); and
- invites the WHO Regional Office for Europe “to support the initiative of the newly independent states and some countries of south-eastern Europe to reform and upgrade their sanitary/epidemiological services and set up public health systems” (paragraph 20d).

addressing vulnerable populations, especially children, and committed to reducing children's exposure to environmental hazards. Countries are now seeking support for implementation work. To provide assistance to Member States, the WHO Regional Office for Europe ensured implementation of a project funded by the European Commission that would provide the evidence base for developing and implementing such action.

## Objectives

Through detailed environment and health performance reviews (EHPRs), the WHO Regional Office for Europe provides country-based analytical descriptions of the environment and health situation in Member States. The major areas of this strategic analysis are the institutional set-up, the policy setting and legal framework, the level and structural functioning of intersectoral collaboration and the available tools for action. This interdisciplinary assessment objectively examines the relevant policy and institutional framework and gives guidance for strengthening environment and health policy-making, planning preventive interventions, ensuring service delivery and conducting surveillance in environment and health. The most important environment and health problems in the country are identified and the public health impact of environmental exposure is assessed. The national performance review is conceived as an integral part of the planning and management of environment and health services and is performed at the request of the Member State concerned.

## The EHPR process

The EHPRs are based on the programme of environmental performance reviews launched in 1991 by the Organisation for Economic Co-operation and Development (OECD) to help OECD member countries improve their individual and collective performance in environmental management. The programme was mandated to the United Nations Economic Commission for Europe (UNECE) in 1993 to ensure coverage of the whole region of Europe (9,10). In the period 1997–2004, the WHO Regional Office for Europe contributed to the environmental performance reviews, providing a review of the health aspects related to the environment.

Since the environmental performance reviews focus on environmental management, the Regional Office recognized the benefits of such country-specific tools and expanded the methods to better explore the relationship between human health and the environment and between the environment and health policy management (11–13).

The EHPRs are in accordance with and draw on the national profiles of children's health and environment developed by WHO headquarters (14) and are strongly linked to ongoing Regional Office environment and health programmes. The European Environment and Health Information System (ENHIS) records information on national implementation and hence progress in achieving targets set through international action programmes (15).

ENHIS provides reliable and standardized information about children's health status and its determinants and trends. ENHIS uses internationally available data sources and monitors and evaluates the effectiveness of policies. ENHIS is a standardized approach used within the EHPRs to analyse the situation from the perspective of the WHO European Region. The analysis is then further complemented by the information gathered in the review process.



Similar to ENHIS, the EHPRs focus on the risk factors that most affect the health of children in the WHO European Region. At the Fourth Ministerial Conference on Environment and Health in 2004, ministers agreed to give priority to four regional priority goals for Europe (16):

- regional priority goal 1: prevent and significantly reduce the morbidity and mortality arising from gastrointestinal disorders and other health effects, by ensuring that adequate measures are taken to improve access to safe and affordable water and adequate sanitation for all children;
- regional priority goal 2: prevent and substantially reduce adverse health effects of accidents and injuries and pursue a decrease in morbidity from lack of adequate physical activity, by promoting safe, secure and supportive human settlements for all children;
- regional priority goal 3: prevent and reduce respiratory disease due to outdoor and indoor air pollution, thereby contributing to a reduction in the frequency of asthmatic attacks, in order to ensure that children can live in an environment with clean air; and
- regional priority goal 4: reduce the risk of disease and disability arising from exposure to hazardous chemicals (such as heavy metals), physical agents (such as excessive noise) and biological agents and to hazardous working environments during pregnancy, childhood and adolescence.

The preparation process of the EHPRs began in June 2006. The evaluation missions in the six countries took place between April 2007 and May 2009.

The European Commission, through the Directorate-General for Health and Consumers, enables the implementation of EHPRs. In support of the European environment and health process, the European Commission identified the need to develop and strengthen policy action to reduce the risk of disease and disability arising from agents in the environment in Europe and is co-funding this activity of the WHO Regional Office for Europe.

## Methods

A team of WHO technical experts carries out each EHPR at the request of the health ministry of the country concerned or the responsible national authority for health. The EHPR takes the form of semistructured interviews with national technical representatives and policy-makers.

The EHPR process comprises the following steps:

1. The standardized method for the review developed at the beginning of the process is applied to all Member States.
2. Consultations are held with the head of the WHO country office and assistance and advice are sought on timing and the personnel involved.
3. Prior consultations are held with the environment and health focal point or project counterpart within the Member State.
4. Relevant policies, information, evidence and data are collected and analysed; and the national counterpart organizes the WHO field visit.

5. The field trip by the WHO technical team to the country takes place; interviews are conducted with preselected representatives of sectors and institutions.
6. A draft report is compiled, summarizing the information collected during the field visit.
7. A final report with recommendations for action is submitted back to the counterpart, the head of the WHO country office and interviewees.
8. The final conclusions are presented to policy-makers at a national workshop.

### **Structure of the report**

This report focuses on the health system review and emphasizes the stewardship function of the health sector in relation to environment and health. It summarizes the main features and priorities of the EHPRs for Estonia, Lithuania, Malta, Poland, Serbia and Slovakia, providing an outline assessment of key similarities and differences as revealed in the six national reports.

This overview summarizes and compares information for each country relating to: key national health characteristics; key effects on children; environment and health priorities, institutional set-up; legal framework (including “soft” laws); intersectoral collaboration; and tools for action. Annex 1 contains individual summaries of each country’s EHPR; the executive summary provides conclusions and recommendations from each report together with summary information (where supplied) on the regional priority goals. All information in this document is derived from the respective EHPR reports. All reports can be downloaded from the following web site: [http://www.euro.who.int/envhealth/topics/20080714\\_1](http://www.euro.who.int/envhealth/topics/20080714_1).

The six EHPRs reviewed mostly conformed to a standard format but varied in presentation and in the specific types and detail of information provided. Some countries lacked certain statistics for comparison.

## 2 Key national health characteristics

Life expectancy at birth for the six countries ranges from 65.0 years (Lithuania) to 77.7 years (Malta) for men and from 76.0 years (Serbia) to 82.3 years (Malta) for women.

Infant mortality ranges from 5.0 (Estonia) to 6.7 (Serbia) per 1000 live births. (The national reports do not provide data for Poland and Slovakia.) The infant mortality rate for all countries is higher than the European Union (EU) average of 4.6 per 1000 live births.

The major cause of death in all countries is cardiovascular disease,<sup>2</sup> accounting for between 41% (Malta) and 55% (Slovakia) of all deaths. The second most prevalent cause of death in all countries is cancer, ranging from 18% (Lithuania) to 27% (Malta) of all deaths. The incidence of cancer of the cervix in Serbia is the highest in the WHO European Region. The suicide rate in Lithuania (20% of all external causes of death) is the highest of all EU countries.

The WHO estimates of the burden of disease from environmental risk factors for the six countries are, in ascending order: 14% in Malta; 16% in Slovakia; 17% in Poland; 19% in Lithuania; 20% in Estonia; and 27% in Serbia and Montenegro.

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<sup>2</sup> Separate figures for cardiovascular disease and cancer mortality in Serbia are not provided; cardiovascular disease and cancer combined account for 70% of all deaths in Serbia.

### 3 Key effects on children

Child mortality due to road accidents is a concern in most countries and is particularly high in Lithuania, where the mortality for young people aged 0–24 years is 14.9 deaths per 100 000 population (three-year rolling average, with the figure for 2006 being 20.5 per 100 000 population) – the second highest in the WHO European Region.

Child mortality from (other) unintentional accidents is a particular concern in Estonia (6.85 deaths per 100 000 population among children aged 1–19 years) and in Lithuania (mortality figures not given). In Serbia (city of Belgrade), most non-fatal injuries among children occur at home.

In Slovakia (2001 data), infant mortality resulting from respiratory disease was particularly high at 0.83 deaths per 1000 live births (versus 0.16 in Estonia, for example).

The mortality rate among children younger than five years in Lithuania, at 9 deaths per 1000 live births, is the highest of all EU countries.

Lithuania has a particular problem with alcohol intoxication among young people.

In Serbia, schoolchildren appear to be at particular risk from problems associated with water and sanitation.

Malta has the highest prevalence of obese and overweight children in the WHO European Region, with almost one third of 13-year-olds reported to be overweight or obese.

In Malta, the death rate from leukaemia among children younger than 15 years is 45 per million per year, above the average for the WHO European Region.

Children aged 13–15 years are especially frequently exposed to environmental tobacco smoke at home in Poland (88% exposed), Estonia (82%), Slovakia (79%) and Serbia (75%). (Malta's EHPR does not provide data.)

Poland has a high and rising rate of allergic rhinoconjunctivitis among children. In Slovakia, respiratory diseases are the most common reason for absence from school due to sickness, with allergic diseases predominant.

## 4 Environment and health priorities

All six countries identify water and sanitation as a priority, particularly Serbia. All countries except Malta identified the provision of safe drinking-water and sanitation in rural areas as a problem; in Poland, only 14% of homes in rural areas are connected to sanitation facilities. Contaminated groundwater in rural areas (and compromised water quality more generally) is considered a particular issue in Lithuania. Nitrate contamination of drinking-water is a concern in Lithuania and Malta. Compliance with bathing water quality standards is particularly problematic in Poland (Serbia's EHPR does not provide data.)

All six countries consider unintentional injuries (especially among children) a priority, especially Estonia, Lithuania and Malta. Lithuania reportedly has one of the highest child death rates from road crashes and other unintentional injuries in Europe. The EHPRs for Estonia and Malta highlight the particular need for efforts to develop and implement policies for preventing home and leisure accidents and injuries. In Malta, improving worker health and safety is also a priority.

All countries identify air pollution as a priority. High levels of particulate matter with an aerodynamic diameter of less than 10  $\mu\text{m}$  ( $\text{PM}_{10}$ ) in cities are identified as a problem in Malta, Poland, Serbia and Slovakia, and high nitrogen dioxide levels (both indoors and outdoors) are considered a particular issue in Slovakia. Lead pollution from the continued use of leaded fuels is a concern in Serbia. In Lithuania, although particulate matter concentrations in cities are not notably high, more than 97% of the urban population is exposed to concentrations exceeding the WHO guidelines. Rising ambient ozone concentrations and increasing emissions of greenhouse gases are considered a particular problem in Malta. Several countries (such as Lithuania) have identified the problem of increasing numbers of cars, many of them old. With regard to indoor air quality, exposure of children to environmental tobacco smoke at home is particularly high in Estonia, Poland, Serbia and Slovakia. Dampness in the housing stock is considered a particular problem in Lithuania. Malta has an above-average prevalence of asthma, and the EHPR highlights the need for analysing trends in indoor air pollution in schools.

In addition, Slovakia's EHPR identifies chemicals (notably heavy metals) from landfill sites as a particular environment and health priority, and Serbia includes hazardous waste, landfill sites, industrial hotspots and occupational accidents as priority issues. In Lithuania, the illegal dumping of waste is considered a threat to public health, and noise is also an increasing concern.

In Estonia and Lithuania, inadequate combination and analysis of health and environment data are considered to hinder the identification and analysis of priorities and the development of relevant policies. The EHPRs for several of the countries (such as Lithuania, Poland, Serbia and Slovakia) emphasize the need for reliable data and the importance of using standardized practical tools, such as ENHIS, for collecting information and setting priorities.

The EHPRs of most countries mention that preventive policies to reduce environment and health risks are often not considered a public health priority and that the focus frequently remains on health care: a curative approach.

Poland's EHPR highlights the limited awareness among government institutions and civil society of the potential health effects of climate change. Although the objectives of

Poland's national health programmes often reflect socioeconomic inequality, this is not always the case for the priorities identified for environment and health activities and programmes. Serbia's EHPR specifically identifies the need for greater political will and support to meet the commitments of the Children's Environment and Health Action Plan for Europe and other requirements for effective monitoring and sustainable health interventions.

## 5 Institutional set-up

All six countries except Serbia (which has applied for EU membership) have been EU members since 2004.

Lithuania, Poland, Serbia and Slovakia have a Ministry of Health. Malta's Ministry for Social Policy, Health, the Elderly and Community Care takes primary responsibility for health and health-related issues. Estonia's Ministry of Social Affairs is responsible for health.

All countries also have an environment ministry and/or an environment inspectorate or agency that links with the health ministry in dealing with health and environment issues.

Most countries have a dedicated department and/or institute of public health and associated public health laboratories. Slovakia has a specific Department of Environment and Health, part of the Public Health Authority, that deals with all public health issues. Similarly, Malta has a newly created Department for Environmental Health under the Ministry for Social Policy, Health, the Elderly and Community Care. Most countries, however, do not have a dedicated environment and health (or environmental health) department or unit. In Serbia, environment and health is not recognized as a distinct field.

In addition to the ministries and departments listed above, countries have a plethora of other ministries, institutions and organizations that are intimately or peripherally involved in environment and health policies, procedures and processes. Structures and organizational details vary considerably between countries. Additional interested and involved departments and ministries typically include those concerned with transport, agriculture, social security, work, labour and occupational health, building, planning and development and education and science. Local government institutions may also play a role. Lithuania's EHPR specifically highlights how the complexity of the organizational framework, with the variety of actors and sometimes unclear responsibilities, may lead to overlaps and problems in implementing environment and health activities and programmes and emphasizes how the institutional set-up may not be fully conducive to intersectoral collaboration. Serbia's EHPR particularly identifies the need to strengthen cooperation, notably in the sharing of data between the various environment and health sectors. Serbia's EHPR also points out that institutions dealing with environmental risk factors do not always explicitly consider health effects as an argument for reducing environmental risks. Lithuania's EHPR similarly suggests that health arguments could be used more effectively in environmental protection.

Nongovernmental organizations (NGOs) play a role in most countries, and their advocacy efforts often focus on children. However, few (or none) are dedicated specifically to environment and health. The most relevant is perhaps the Health and Environment group in Malta that is part of the International Society of Doctors for the Environment. Estonia's and Serbia's EHPs recommend that NGOs be an integral part of intersectoral committees dealing with environment and health issues; Malta's report similarly suggests that they be fully represented in the NEHAP process (as is the case in Slovakia). For all countries, it is suggested that NGOs be part of the decision-making process.

For several countries (such as Malta and Serbia), the EHPR highlights the problem of understaffing and/or the lack of suitably qualified personnel in environment and health, and this appears to apply to most of the six countries. Serbia's EHPR recommends

including environment and health as a distinct discipline in the education and training of health and environment professionals, and Poland's Serbia's and Slovakia's EHPRs advocate improved and stable employment opportunities for environment and health practitioners. Serbia's EHPR also recommends strengthening occupational health support services. For several countries, the EHPR states that the awareness of physicians (general practitioners) and their role in the environment and health process is unclear or suboptimal, especially considering their key interface with the general public.



## 6 Tools for management and legal framework

### Hard law

Most countries have a public health act (or similar act) that is the main law relevant to environment and health considerations. Supplementary to this, most countries have regulations covering transport, food safety, consumer goods, planning and construction, occupational health and environmental protection that are relevant to environment and health issues and concerns. Poland has no legally binding public health act; the Environmental Protection Act is the principal piece of legislation relevant to environment and health issues. Serbia's Public Health Law of 2009 includes environment and health in statutory public health activities. However, until then, Serbia had separate laws (such as health care, food safety and sanitary surveillance laws) covering environment and health aspects, supplemented by the provisions of the Law on Environmental Protection and other environmental legislation. Laws on environmental protection play an important role in environment and health in all countries, although the relationship between environment and health is not always made explicit or directly tackled. In Slovakia, environment and health policies are referred to mainly in relation to protecting workers.

The EHPRs refer to EU directives, norms, standards and procedures in relation to their national laws on environment and health. Many relevant legal instruments have been developed based on EU legislation. Serbia is making particular efforts to harmonize new laws (such as on chemicals and water) with EU directives and their principles, although most laws are not yet harmonized and do not specifically address children. Committing resources to transposing EU directives and priorities may adversely affect efforts for national priority-setting.

### Soft law

NEHAPs and children's environment and health action plans (and/or similar nationally focused public health plans and programmes) are considered valuable instruments for directing and driving environment and health priorities in all countries, although some countries (such as Serbia) have not yet fully developed and/or implemented them. In Malta, the recently approved NEHAP has been influential in shaping environment and health responsibilities. Many countries (such as Estonia, Malta and Slovakia) have additional specific strategies directed at improving health by changing lifestyles – healthy eating and increased exercise, for example – and at reducing or preventing injuries, cancer, cardiovascular disease and other diseases. Malta's EHPR nevertheless identifies the need for an overarching comprehensive national public health strategy. In most countries, health protection and improvement programmes identify children as a target. In some countries (such as Slovakia), public health legislation targets them specifically.

## Economic aspects

The lack of money and/or systems for allocating it efficiently to environment and health activities is identified as an issue in all countries and one of the greatest challenges in Estonia and Lithuania. Lithuania's EHPR also considers the funding of public health and environment and health action to be inadequate, especially in health promotion and disease prevention. Malta is considered to have inadequate resources – both financial and human – for implementing environment and health measures at the local level.

Cost–benefit analysis is considered an important tool, and Estonia's and Lithuania's EHPRs advocate using and evaluating experience with this approach in other countries. In Lithuania and Serbia, the integration of health costs into policy-making is said to be impeded by the lack of reliable information and also, in Lithuania, by weak collaboration between the responsible ministries. Lithuania's EHPR advocates developing and applying appropriate economic instruments to strengthen environment and health initiatives and conducting research and transferring knowledge on the economic effects of environment and health risks and the cost–effectiveness of policies. The EHPRs for Poland, Serbia and Slovakia similarly support the development and use of economic arguments for policy-making and priority-setting, and Poland's EHPR suggests that protecting public health should figure more prominently in legislation related to the environment and to economic development. Serbia's EHPR additionally suggests applying economic instruments to improve occupational health and safety.

## Other comments

Estonia has no clear strategy on environment and health, and this also appears to be the case in Lithuania, despite public health law requirements. Estonia's EHPR also indicates that, due to the lack of reliable data, the health costs of environmental pollution are not sufficiently integrated into policy-making. Adequate and effective enforcement of environment and health policies is identified as an issue in Lithuania, for example.

Serbia's EHPR calls for the NEHAP to be developed to include appropriate legal, organizational and financial mechanisms. It similarly recommends strengthening the capacity of legislation and enforcement in environment and health policies. Malta's EHPR proposes that policy documents have an appropriate implementation structure to transform them into action. It is recommended that NEHAPs and other such tools always include evaluation mechanisms.

Most countries have policies and/or legislation on smoking in the workplace and in public places, but policies aimed at reducing environmental tobacco smoke exposure in the home are limited. Estonia's EHPR, for example, recommends activities aimed at raising public awareness about environmental tobacco smoke in the home.

Malta's EHPR recognizes a particular need for an overall national policy on preventing injuries (rather than specifically road safety and occupational injuries) and identifies deficiencies in identifying health effects in the environmental impact assessment process. This is almost certainly a problem in all countries; Slovakia is an example of good practice, where the environment ministry has very good experience in environmental impact assessment and helps the health sector better elaborate the health elements of the environmental impact assessment.

Regulatory frameworks in Lithuania on climate change and energy-related issues do not currently address related health aspects.

The EHPR for Slovakia in particular recognizes the importance of partnerships among institutions and sectors in supporting public health policy and programmes.

## 7 Intersectoral collaboration

The EHPRs of all six countries highlight the importance of and need for intersectoral collaboration in developing and applying environment and health policies and legislation, but most accept that this is frequently suboptimal, usually because not all relevant players are appropriately and actively engaged. Intersectoral cooperation is frequently achieved by establishing intersectoral committees and consultative groups.

Most of the EHPRs identify the need for strengthening and/or streamlining intersectoral collaboration, which sometimes occurs at one operational level (such as locally or regionally) better than at another and in some areas of activity more than in others. Collaboration often occurs only in projects and not at the policy level. In Lithuania, one hindrance to successful intersectoral collaboration identified is the fact that one ministry often has final responsibility for targets and budgets despite other competing demands. The importance of the involvement of the economic and finance sectors is frequently raised.

Particular successes have been identified (such as in Serbia) in developing and delivering health promotion campaigns. In Lithuania, the public health infrastructure of the municipal public health bureaus creates particularly good opportunities for enhanced collaboration on environment and health at the local level.

The EHPRs for several countries identify the important part played by NEHAPs and children's environment and health action plans and similar national health plans and programmes in fostering collaboration between departments involved in environment and health policy-making and with external stakeholders.

The communication of data between government institutions and to the public is often particularly deficient. The role and involvement of NGOs is generally regarded as weak. Problems also exist in communication between ministries and between sectors.

In several countries (such as Estonia), intersectoral cooperation seems to be more efficient at the local or county level and relies somewhat on personal contacts between institutions. Estonia's EHPR identifies the need for better streamlining of the responsibilities, accountability and representation of the various sectors in environment and health policy-making and advocates systematically including NGOs in the policy-making process. Similarly, Lithuania's EHPR notes that cooperation with NGOs, or the public more generally, is not taking place systematically in environment and health.

In Lithuania, the lack of a policy framework on environment and health often results in intersectoral cooperation taking place solely at the project level. The various ministries and institutions have a perceived lack of ownership of responsibility for environment and health issues. Reinitiating Lithuania's NEHAP and/or implementing a children's environment and health action plan are advocated to stimulate intersectoral cooperation between environment and health. Poland's EHPR calls for establishing clearer responsibilities and improved dialogue between sectors (with funding schemes attached to the activities). In Serbia, a coordinated communication strategy and inadequate dissemination of data and reporting between all levels are lacking. In Slovakia, cooperation at the regional level particularly needs to be improved.

## 8 Tools for action

The tools for action the national EHPRs most frequently identify and describe are monitoring, environmental impact assessment and health impact assessment, capacity-building and communication.

Monitoring is considered extremely important, and all countries undertake it to different degrees. Its main objectives are to indicate levels of compliance (with regulations, standards etc.) and to assess trends over time. However, a wide range of institutions with different responsibilities and with varying levels of cooperation and data-sharing frequently undertake monitoring. Slovakia's EHPR, for example, has identified the need for homogeneous data collection and processing protocols and procedures and proper communication of information to the public. Even where environment and health information is extensive and accessible, it is often (such as in Lithuania) deemed not to be effectively used to protect the public health. Problems relating to deficiencies in the formal identification and use of environment and health indicators are acknowledged. Although such indicators have been introduced in Lithuania, the lack of a regulatory framework or an integrated framework of environment and health information diminishes their useful application to policy evaluation. Lithuania's EHPR recommends establishing a national list of high-priority environment and health parameters with the collaboration and involvement of all stakeholders in parallel with developing appropriate regulatory mechanisms.

Monitoring activities tend to focus on living and working environments and on collecting general health statistics. The environmental media most frequently monitored are air and water. Soil parameters are rarely regularly measured and monitored. The degree of noise monitoring varies among the countries. Food quality is often subjected to monitoring programmes of varying intensity. Other activities relate to collecting statistics in relation to accidents and occupational health. Some countries (such as Serbia) have formalized, regular national health surveys, although the degree to which these include environmental determinants of health varies. In other countries, the formal reporting of standardized data is irregular or absent, and the routine collection of even basic data – in some aspects at least – may not yet be well established (such as accident data in Serbia). Estonia and Lithuania also lack a central registry for accident and injury data, and these countries' EHPRs include a recommendation for enhanced injury surveillance, monitoring and evaluation. Malta's report similarly recommends that greater attention be focused on national surveillance of injuries and collecting baseline data for establishing evidence-based interventions. Poland has no reliable countrywide surveillance of injuries or other environmentally related diseases and conditions.

Indoor air quality is rarely measured and assessed, although some countries (such as Malta) have indoor monitoring programmes or projects focused on schools. Several countries (such as Serbia) consider ENHIS to be a key driving force for analysing the national environment and health situation, and Poland's and Serbia's EHPRs recommend further developing and implementing ENHIS. Poland's report notes the lack of integrated health and environment information in the country; although there is considerable information, there is little data-sharing between institutions, and a uniform approach to collating, analysing and reporting it to support environment and health policy action is lacking. Several of the EHPRs note the general lack of combined health and environment data.

Environmental impact assessment is more or less institutionalized in all countries. The requirement for and performance of health impact assessment is generally less formalized,

although some countries (such as Lithuania, for example) have a well-established mechanism for this. The responsibilities for requesting, undertaking and implementing environmental impact assessment and health impact assessment tend to vary both between and within countries. For example, the EHPRs for Poland and Slovakia highlight the need for further developing health impact assessment tools and methods, and Serbia's and Slovakia's EHPRs call for strengthening and developing knowledge and procedures related to environmental impact assessment and health impact assessment. This is probably valid for all countries. Estonia's EHPR recommends that regulations more clearly stipulate the requirements for health impact assessment within environmental impact assessment, and the EHPR for Poland emphasizes the need to clarify responsibilities in environmental impact assessment and health impact assessment.

With regard to capacity-building (including education), most of the EHPRs emphasize the lack or inadequacy of education and training of environment and health professionals. Estonia, for example, has no specialized institution for educating or training environmental health professionals. Similarly, Serbia and Slovakia have no recognized national centre for environment and health expertise. Many of the EHPRs note the general paucity of environment and health expertise. Lithuania's and Slovakia's EHPRs both suggest that training of public health professionals should be extended to include physicians and state that environment and health research and education are inadequate. Malta's EHPR notes that no formal training on environmental impact assessment is available in the country. In Serbia, the lack of equipment and facility capacity is highlighted.

Many of the EHPRs note deficiencies in communicating with the public. In Estonia, although data on specific environmental parameters are collected, they are not systematically communicated to the public, and appropriate indicators for assessing the effects of policies are lacking. Lithuania's EHPR recommends that information provided to the public be strengthened to raise public interest and involvement and that better partnerships be established for improving communication. In Malta, the population is only marginally aware of and/or concerned about environment and health risk factors. Malta's EHPR makes several recommendations on the standardized collection and reporting of data and its dissemination to the public. Poland's and Serbia's EHPRs note the general lack of public awareness of environment and health risk factors and recommend public awareness-raising together with more strongly encouraging public participation.

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## Annex 1. Extended summaries of the individual reviews for Estonia, Lithuania, Malta, Poland, Serbia and Slovakia

### A. Estonia

#### 1. Key national health characteristics

- Life expectancy at birth (2007): 67.1 years for men; 78.7 years for women.
- Infant mortality (2007): 5.0 per 1000 births.
- Major causes of death: cardiovascular (circulatory) diseases (47% for men; 55% for women), cancer (21% for men; 20% for women), and external causes (14% for men; 7% for women).
- WHO estimate of the burden of disease from environmental risk factors (2004): 20%.

#### 2. Key effects on children

- Mortality due to road traffic injuries among young people (0–24 years): 9.12 deaths per 100 000 population.
- Mortality due to other unintentional injuries among young children (1–19 years old): 6.85 deaths per 100 000 population, which is especially high.
- Postneonatal deaths from respiratory diseases: 0.16 per 1000 live births.

#### 3. Identified environment and health priorities

- Water and sanitation  
In 2002, 72% of the population was connected to a public water supply, rising to 77% in 2006. The coverage was 86% for the urban population versus 59% for the rural population. Of the overall population, 75% is connected to wastewater-treatment facilities but only 51% in rural areas (2006 data). Estonia has successfully implemented the EU Bathing Water Directive (76/160/EEC); during 2004–2006, the quality of bathing water in freshwater zones fully complied with directives, and 76% of the bathing areas met the mandatory requirements in coastal zones.
- Exposure to indoor air pollution from the combustion of solid fuels  
About 82% of children 13–15 years old are exposed to environmental tobacco smoke at home. Although this is high, 18% of the children 0–14 years old live in homes burning solid fuel, and this is considered the most significant indoor air quality issue in health terms in Estonia.
- Unintentional injuries among children  
Mortality due to road traffic injuries among young people (0–24 years) is 9.12 deaths per 100 000 population. Mortality due to other unintentional injuries among children (1–19 years old) is 6.85 deaths per 100 000 population. Both these figures are above the average for the WHO European Region.

## Further comments and recommendations

- Exposure to environmental tobacco smoke is still high in home environments.
- Estonia has met the requirements for microbiological parameters in all drinking-water supply systems.
- No waterborne diseases have been reported since 1993.
- Many road safety measures have been well implemented, but the number of deaths from road crashes is still very high. Policies to prevent leisure and home accidents are inadequate.
- Health and environment data are not sufficiently combined and regularly analysed.
- A monitoring programme should be launched to ensure the safety of the water in coastal bathing sites.
- More effort should be put into developing and implementing policies for preventing home and leisure injuries.
- Energy policies to promote affordable energy are necessary to allow all residents to heat their homes.
- The energy efficiency of housing should be improved to reduce the cost of heating and maintaining healthy and comfortable temperatures.
- Developing information brochures by the health sector in cooperation with other relevant ministries on health risks arising from the combustion of solid fuels would help to raise awareness.
- Additional efforts should be made to raise awareness on tobacco smoke in home environments through various means such as brochures and television spots.
- The identification of environment and health priorities should be strengthened at the national and regional levels by implementing ENHIS.

## 4. Institutional set-up

Estonia has been a member of the EU and of the North Atlantic Treaty Organization since 2004 and a member of WHO since 1993. It is a democratic parliamentary republic.

The main public health institutions at the national level relevant for environment and health are the Ministry of Social Affairs, the Health Protection Inspection, the National Institute of Health Development, the Health Care Board, the Labour Inspectorate and the Chemicals Notification Centre.

- **Ministry of Social Affairs**

The Ministry of Social Affairs is the steward of the health system in Estonia. It has three major policy divisions: health care, social services and employment. The health division is divided into four administrative departments: the Health Care Department, responsible for health care, investment and drug policy; the Public Health Department, responsible for public health policy, disease prevention and health promotion programmes, health protection, environment and health and chemical safety policy and legislation; the Health Information and Analysis Department, responsible for coordinating the system of health statistics and conducting policy analysis; and the E-health Department, responsible for managing, coordinating, planning and implementing e-health projects.

The Public Health Department is responsible for developing and implementing overall health policy, which is aimed to ensure health protection and a healthy environment, promote health and prevent diseases. It is the key department dealing with environment and health as well as chemical safety issues. The Department has

a leading role in developing health policy and coordinating implementation especially in the following areas: HIV, preventing drug and alcohol abuse, mental health, vaccination, preventing smoking, nutritional diseases and health risks influenced by environmental factors (such as drinking-water and chemical safety), controlling infectious diseases, preventing noncommunicable diseases and protecting the health of children and adolescents. The Public Health Department collaborates with other sectors relevant to environment and health such as updating and formulating legislation in tobacco and alcohol but also in food and chemicals.

Currently, the Public Health Department is responsible for implementing the National Health Plan 2009–2020, which the government approved in July 2008. The National Health Plan is a general strategy covering five areas: social inclusion and equal opportunities; secure development of youth and children; healthy living, working and studying environments; healthy lifestyles; and developing the health care system.

The major tasks of the Environmental Health and Chemical Safety Unit are: formulating environmental health and chemical safety policies and strategies; drafting and reviewing acts and regulations; and transposing EU regulations into national policies dealing with environmental risk factors to health (such as chemical safety, noise, drinking-water and bathing water).

- Health Protection Inspectorate

The Health Protection Inspectorate (under the Ministry of Social Affairs) is responsible for monitoring environment and health risk factors and enforcing regulations relevant to environment and health. The Inspectorate is responsible for surveillance and control of communicable diseases; early detection and response to outbreaks; collecting and analysing immunization data; and enforcing legislation in environment and health (drinking-water, indoor air, noise, chemicals, vibration and light). It contains the Department of Communicable Diseases Surveillance and Control (which includes the Bureau of Epidemiological Preparedness and National Influenza Centre), the Environmental Health Expertise Department and the Planning and Monitoring Department.

- National Institute for Health Development

The National Institute for Health Development is a national research and development agency administered by the Ministry of Social Affairs. The Institute is a key implementer in public health with a broad set of roles and activities aimed at developing and implementing national health programmes and strategies (described elsewhere), performing public health research and monitoring but also providing continuing education for health professionals.

- Health Care Board

In public health, the Health Care Board is responsible for controlling the quality of occupational health care services. It has been responsible for elaborating guidelines on chemical safety in working environments (guidelines for health care staff) and for classifying occupational diseases.

- Chemicals Notification Centre

The Chemicals Notification Centre is the competent authority for the EU REACH legislation at the national level. Its main tasks are controlling imported and exported chemicals and notifying about new substances. The Centre is responsible

for implementing the Globally Harmonized System of Classification and Labelling of Chemicals. The Poison Information Centre under the Chemicals Notification Centre provides information for health care personnel and the general public.

- Labour Inspectorate  
Occupational health is an integral part of environment and health. The Labour Inspectorate is the main supervisor of occupational health, being responsible for supervising employers' compliance with existing health and safety regulations and controlling whether employers have accurate risk assessment information and whether all the necessary health checks have been carried out and measures implemented.

In addition, several institutions are involved in environmental protection.

- Ministry of the Environment  
The Ministry of the Environment does not have a special unit in charge of environment and health, but in 2007–2008 an environment and health focal point was officially appointed for the first time. The Ministry is responsible for organizing and coordinating environmental policy. It is in charge of developing and implementing the Environmental Strategy 2030 and the Environmental Action Plan 2007–2013, which the government approved in 2007. The Ministry reports to the government about the activities implemented for fulfilling the Strategy, which is to be considered the umbrella strategy for all other environmental strategies.
- Environmental Inspectorate  
The Environmental Inspectorate is directly responsible to the Ministry of the Environment and operates in all areas of environmental protection in Estonia. The tasks of the Environmental Inspectorate, which are connected with environmentally related hazards to public health, are: (a) to implement measures provided by law for preventing illegal activities, (b) to suspend unlawful activities damaging or dangerous to the environment and (c) to monitor activities that use natural resources if they endanger life, health or property.
- Estonian Environment Information Centre
- Estonian Environment Research Centre
- Estonian Meteorological and Hydrological Institute
- Estonian Radiation Protection Centre

Other relevant sectors in environment and health policy-making include the following.

- Ministry of the Interior
- Ministry of Economic Affairs and Communications
- Ministry of Agriculture
- Estonian Technical Surveillance Authority
- Municipalities and counties
- Various NGOs

Further comments and recommendations

- There is a relative lack of nurses in primary health care to ensure sufficient attention to disease prevention in primary health care.

- Occupational health services are currently weak.
- In 2007, the Ministry of the Environment officially recognized environment and health as a priority by appointing a health and environment focal point.
- Cooperation between the Environmental Inspectorate and the health sector seems to be limited.
- Landscape protection forms part of the spatial plan, but environmental management is not considered from a health perspective.
- No NGO deals with environment and health. Most NGOs focus on environmental management or specific environmental topics.
- The Environmental Health and Chemical Safety Unit within the Public Health Department should be strengthened with additional human resources to address all relevant environment and health risks.
- Health risk assessment and epidemiological knowledge and surveillance of the Health Protection Inspectorate should be further empowered.
- The University of Tartu, National Institute for Health Development and other institutions providing training to health professionals should further include environment and health issues in their priorities.
- The National Institute for Health Development should improve and strengthen the coordination related to environment and health with the Health Protection Inspectorate and the Environmental Health and Chemical Safety Unit of the Public Health Department.
- Given the increasing importance of primary health care, family doctors and nurses should be trained in environment and health to support preventive action.
- Occupational health services need to be strengthened by reviewing and discussing the technical and educational support and bolstering the core institutional capacity and human resource capability for dealing with the special health needs of working populations.
- The Ministry of the Environment should ensure that the county environmental departments have sufficient capacity in staff specialized in environmental impact assessment.
- The organizational structure between the Health Protection Inspectorate, the Environmental Inspectorate and the Labour Inspectorate needs to be streamlined.
- Cooperation in awareness-raising should be strengthened further based on the good cooperation between the Estonian Radiation Protection Centre and the Ministry of Social Affairs in preparing a brochure on the risks of radon in drinking-water.
- NGOs should be an integral part of intersectoral committees dealing with environment and health issues.
- The Ministry of the Environment should give municipalities further financial and technical support for implementing the requirements of EU regulations at the local level.

## 5. *Tools for management and legal framework*

Environment and health policy in Estonia is implemented under the umbrella of several national acts and policy programmes from the health sector, the environment sector and the transport sector.

- The Public Health Act is currently being revised according to the needs for implementing the National Health Plan 2009–2020.
- The National Health Plan 2009–2020 was approved in July 2008. It is the umbrella strategy for all national health strategies and policies. The Ministry of Social Affairs coordinates the implementation of the population health strategy. Other participants in implementing the strategy include the Office of the Prime Minister, Ministry of Defence, Ministry of the Environment, Ministry of the Interior, Ministry of Education and Research, Ministry of Agriculture, Ministry of Culture, Ministry of Justice, Ministry of Economic Affairs and Communications, local governments and citizens' associations. Currently, the government has approved five national health programmes, which are under the responsibility of the Public Health Department of the Ministry of Social Affairs; three are especially relevant to environment and health priorities.
- An injury strategy is being elaborated covering alcohol-related injuries. It focuses on young children, including newborns, and has the objective of raising awareness. The priorities are suicide and road traffic and home injuries.
- In May 2007, the Minister of Social Affairs approved the National Cancer Prevention Strategy 2007–2015, which covers various environment and health components. The Strategy addresses chemical and carcinogenic hazards in the living and working environments by mapping carcinogenic hazards in these environments and developing chemical safety supervision aiming at planned information campaigns. In addition, the Strategy addresses nutrition and food safety – raising awareness about healthy food choices (food production technology and safe food production).
- Among other disease prevention activities (food and nutrition, smoking, etc.), the National Strategy for Prevention of Cardiovascular Diseases 2005–2020 is promoting physical activity by addressing the physical infrastructure needed to ensure exercise and physical activity by raising awareness. The Strategy focuses on the need to map available facilities, train family doctors and prevent leisure sports accidents. Activities are implemented jointly with the Ministry of Culture, which has an independent strategy on physical activity (Sport for All 2006–2010).
- The major environmental strategy is the Environmental Strategy 2030, which is implemented through the Environmental Action Plan 2007–2013. The first national Environmental Strategy, drafted in 1997, did not contain any specific chapter on health. The second Strategy, which was drafted in 2005, covering the period until 2010, indicated the need for strengthening the integrated activities regarding environment and health and highlighted the need for understanding the connections between environment and health. Parliament approved the new long-term Environmental Strategy 2030 in 2007 to ensure health through safe and healthy environments, food, water and air conditions.
- The first National Environmental Action Plan following the Environmental Strategy of 1997 was drafted in 1998 and set the implementation required to attain the short-term goals of the Strategy in motion.
- In accordance with the Environmental Strategy 2030, the government approved the Environmental Action Plan for 2007–2013 on 22 February 2007. The Plan identifies the basic activities that will achieve the goals set in the Environmental Strategy 2030 and thereby to improve the human environment.

- The National Environment and Health Action Plan (NEHAP), approved in 1999, was the first plan in Estonia to summarize the environmental risk factors to health. The actions formulated were based on assessing the exposure of the population to hazardous environmental factors and on assessing environment and health risk and setting priorities for action. The NEHAP incorporated action as well as health-related tasks that were part of various other action plans from ministries, organizations, local governments and others, giving them a new content, meaning and evaluation from the standpoint of protecting public health. The NEHAP covered the areas of environment and health that were not included either in the Environmental Strategy (adopted by the Parliament in 1997) or the National Environmental Action Plan (approved by the government on 26 May 1998). Currently Estonia has no NEHAP or children's environment and health action plan, and no intersectoral committee or forum is in place for implementing the commitments related to the Fourth Ministerial Conference on Environment and Health in Budapest in 2004.
- Relevant transport policies are the National Road Safety Programme, Traffic Act, Transport Development Plan, Road Transport Act and Public Transport Development Plan.

Many other national and international relevant plans, strategies and conventions cover environment and health priorities (not detailed here).

Other relevant policies include the Public Information Act and the Building Act, and economics and funding policies are also relevant.

#### Further comments and recommendations

- Although environment and health is considered to be an integral part of public health in Estonia, there is no clear strategy on environment and health. Nevertheless, a chapter of the new National Health Plan 2009–2020 covers environment and health.
- Among the environment and health risks and determinants, public health strategies and programmes mostly focus on physical activity.
- The terms used in environment and health are limited and not systematically used in regulations and strategies for health.
- Prevention of road traffic injury is an area of good cooperation between the health sector and the Ministry of Economy and Communications and other relevant sectors.
- The National Environmental Health Plan was the first strategy approved by the government addressing all the environment risk factors to health.
- Compared with the Environmental Strategy of 1997, the new Environmental Strategy 2030 adopted in 2005 contains a chapter focusing on the need for strengthening the integrated activities regarding environment and health.
- Due to the lack of reliable data, the health costs of environmental pollution are not sufficiently integrated into policy-making.
- Financing mechanisms mainly focus on industry and not on the consumption patterns of the population.
- Transport strategies cover all relevant aspects of transport: air pollution, safety and physical activity.
- Lack of funds is one of Estonia's greatest challenges related to environment and health.
- The new National Health Plan 2009–2020 including environment and health addresses issues of human health related to environmental factors: it is an opportunity to operationalize the environment and health approach in Estonia.

- Excise and tax authorities (Ministry of Finance) require detailed health information and data to develop economic instruments that help monitor and forecast the impact of industrial activity on health.
- Environment and health sectors need to improve intersectoral collaboration to ensure appropriate monitoring instruments for the future use of economic instruments for industry and private bodies.
- Experience from other countries in the cost–benefit analysis of interventions in environmental policies and economic instruments should be used and evaluated.
- The Building Act should guarantee accessibility to buildings for people with physical handicaps and disabilities.
- In the framework of improved road safety measures, more attention should be focused on developing legislative measures protecting the safety of cyclists.
- Specific funds for environment and health should be allocated and monitored at the county and local levels.

## 6. *Intersectoral collaboration*

- Intersectorality in developing national legislation and regulations collectively is a strongly institutionalized process in Estonia. Many strategies have been developed that can be seen as a major step forward in tackling the root causes of ill health and addressing the principal health concerns. An important feature of these strategies is their inclusive, multisectoral, multi-stakeholder approach. The governing or overseeing bodies of the strategies have broad representation.
- All government regulations, policies and programmes have to go through an intersectoral consultation process before being sent for approval to the government. Representatives of all ministries have to approve the draft or make comments as appropriate.
- The development of intersectoral strategies has been an important part of public health reform in recent years. The leading role of the Ministry of Social Affairs and its understanding of its own mission in public health within the Public Health Department is essential in the continued development of this field.
- Several intersectoral committees have been set up to manage, monitor and implement ongoing policy processes.
- At the umbrella level, the Ministry of Social Affairs has established a multisectoral committee for public health that is in charge of implementing a framework plan for the various authorities in public health, and the national health strategies have been devised to ensure substantial intersectoral cooperation.
- Official institutions work together with NGOs, but their cooperation is not systematic. The involvement of NGOs is particularly developed in chemical safety.



## Further comments and recommendations

- Intersectoral cooperation seems to be more efficient at the county level, where the organization of the work is predominantly based on closer personal contacts between the institutions.
- Many of the reviewed institutions have extensive and well-functioning cooperation at the international level.
- The responsibility, accountability and representation of the sectors in environment and health policy-making need to be better streamlined.
- NGOs should be systematically and regularly included in the process of developing policy.

## 7. *Tools for action*

### Environmental impact assessment and health impact assessment

- The Environmental Impact Assessment and Environmental Management System Act (98) entered into force in 2005 (amended 19 June 2008). This Act provides the legal basis and procedures for environmental impact assessment. The objectives of environmental impact assessment are to provide information to decision-makers on the likely environmental effects of the proposed activity and its reasonable alternatives and the potential to prevent or minimize negative environmental effects. The Act also stipulates requirements for strategic environmental assessment to contribute to integrating environmental considerations into the preparation and adoption of strategic planning documents. Environmental effects are any potential direct or indirect effects of activities on human health and well-being, the environment, cultural heritage or property. The environmental effects resulting from the implementation of a strategic planning document and the area likely to be affected must be taken into account based on the risks to human health or the environment, including the probability of accidents.

### Monitoring

- The monitoring of living and working environments and the inspection, enforcement and monitoring of goods are key areas of health protection and basic health services. Monitoring of environment and health parameters can be used to indicate the level of compliance with a standard but also to assess trends over time. Monitoring is mainly performed by the national and local health protection inspectorates and environmental inspectorates but also by specialized institutes or agencies. The Ministry of the Environment is responsible for most environmental monitoring, which is regulated by the national monitoring programme organized along 12 subprogrammes.
- The Health Protection Inspectorate regularly monitors the quality of drinking-water and bathing water. Water monitoring follows the requirements established by EU regulations but has additional stricter regulations. The Health Protection Inspectorate monitors the water quality in public places, but suppliers are responsible for the water in private households. The Inspectorate nevertheless checks the monitoring of the suppliers. The Health Protection Inspectorate also organizes the mapping of radiation in drinking-water. The Radiation Protection Centre monitors radiation in drinking-water.
- The Ministry of the Environment is responsible for monitoring coastal waters, rivers, lakes and groundwater under the state monitoring programme. The Ministry of the Environment reports to the European Commission.

- Various institutions collect data on injuries and deaths from road crashes and other unintentional injuries. The police, Estonian Traffic Insurance Fund and Estonian Road Administration gather information on road crashes. The Ministry of Social Affairs also seems to collect some data through hospitals. The collection of data on unintentional injuries tends to focus on road traffic injuries. There is no central registry for children's accidents, and there is little or no coordination among the various services. The Labour Inspectorate collects data on occupational accidents, but occupational accidents are considered to be underestimated.
- Air quality monitoring takes place pursuant to the Ambient Air Protection Act which, together with specific regulations, covers all requirements laid down in the relevant EU directives. The main purpose of the Act is to maintain the quality of the ambient air in regions with good air quality and to improve it in areas in which air quality does not meet the established requirements. The Estonian Environment Research Centre under the Ministry of the Environment is responsible for monitoring air quality.
- The Veterinary and Food Board supervises food safety and quality under the Food Act. The planning of activities is based on the type of food-handling operators, food types, and type of research. Official monitoring programmes represent sampling programmes that aim to monitor the situation in food safety and quality and to detect food that is dangerous for human health. Animals, food raw material and food are sampled in the framework of various programmes to ensure safety within the whole food chain.
- Occupational health is assessed through occupational diseases, work-related diseases and occupational health statistics, which are analysed annually. Occupational health service indicators are monitored regularly. Employers are responsible for assessing their occupational hazards and sending their employees for health checks based on this risk assessment. The Labour Inspectorate is responsible for supervising employers' compliance with existing health and safety regulations.
- In addition, monitoring of goods, noise and radiation is undertaken nationally.

Other tools detailed in the report are communication and capacity-building.

#### Further comments and recommendations

- There is some confusion on the responsibility of the Ministry of the Environment and the related county departments for forwarding environmental impact assessment results to the health sector or whether they have to assess the effects on health themselves.
- Data on specific environmental parameters are collected in Estonia, but information needs to be prepared and used for assessing environment and health within the country.
- Despite a government decree emphasizing the obligation of all institutions to make the information available to the public, not all the available data are systematically communicated to the public, resulting in a lack of the public awareness on environmental threats to health.
- There is a lack of indicators assessing the effect of policies in the country.
- The public interest in environment and health effects and the involvement in public initiatives for health promotion are limited.
- Communication flow between public health professionals in the Baltic countries is institutionalized.
- Estonia has no specialized institution for educating or training environment and health professionals.
- In the past the focus was on environment and health and occupational health; the current priority is managing health care systems.
- No mechanism for specialization or continuing professional training in environment and health for existing health care staff has been developed.

- Appropriate regulation should more clearly stipulate the requirements for health impact assessment within environmental impact assessment.
- The number of specialists performing health impact assessment and the quality of the assessment in the public and private sectors need to be increased.
- Incentives should be provided for local authorities to undertake health impact assessment by allocating additional human and financial resources.
- Local health profiles should be used in the local authority policy-making process and in the information used for health impact assessment.
- Health impact assessment in all sectors and all major policy initiatives should be encouraged and streamlined.
- A web site and database on injuries should be created.
- Due to the lack of a central registry for injuries in Estonia, injury surveillance should be further developed to better define the burden, causes and effects of injuries, for advocacy and for monitoring and evaluation.
- A designated institution should progressively adopt indicator-based analysis and reporting following the ENHIS methods; the Ministry of Social Affairs needs more ownership of ENHIS in Estonia.
- Efforts should be made to have better partnerships between institutions related to environment and health (and their mass-media people) with journalists and other mass-media employees.
- The knowledge and understanding among general journalists on environment and health that they can communicate reliably to the general population should be improved.
- The educational curricula of the health sector need to be changed to integrate environment and health modules and to improve the quantity and the quality of trained environment and health professionals.

In addition, the report contains a long and detailed section assessing chemical safety strategies and action.

## **Conclusions and recommendations**

### Conclusions

- Environment and health has been further officially recognized within the health sector through the establishment of the Environmental Health and Chemical Safety Unit within the Public Health Department of the Ministry of Social Affairs and is a core element of the five key pillars of the new National Health Plan 2009–2020.
- The new National Health Plan 2009–2020, including environment and health, addresses issues of human health related to environmental factors: it is an opportunity to operationalize the environment and health approach in Estonia.
- The Health Protection Inspectorate is responsible for enforcing legislation relevant to environment and health through its Environmental Health Expertise Department.
- Compared with the Environmental Strategy of 1997, the new Environmental Strategy 2030 adopted in 2005 contains a chapter focusing on the need for strengthening the integrated activities related to environment and health.
- To ensure an effective response to environment and health issues, specific and appropriate human and financial resources should be allocated to environment and health as one of the key elements of the health system addressing public health services.
- Environment and health appear to be mainly considered from the perspective of sanitary surveillance and inspection in relation to preventing communicable disease. The broader definition of environment and health is often not sufficiently recognized.

- Intersectorality in developing national legislation and regulations is a well-functioning and institutionalized process in Estonia.
- Several intersectoral committees have been set up to manage ongoing policy processes.
- Health impact assessment requirements are not clearly enough expressed in environmental impact assessment reports, and the results of environmental impact assessment are not accessible on the Internet, although the Ministry of the Environment planned to do this in 2009.
- Estonia has focused on chemical safety more than other topics in environment and health, and the Ministry of Social Affairs has a dominant role in chemical safety.
- The Environment and Health Unit within the Public Health Department of the Ministry of Social Affairs has insufficient human resources to cover all relevant environment and health issues.

### Recommendations

- The Environmental Health and Chemical Safety Unit within the Public Health Department of the Ministry of Social Affairs should be strengthened with additional human resources to address all relevant environment and health risks.
- A clear institutional leader (specific ministry) should be assigned to be responsible for overseeing, coordinating and strategically driving the environment and health process in Estonia.
- The priorities defined within the Children's Environment and Health Action Plan for Europe should be integrated into the action plans that will be developed for implementing the National Health Plan 2009–2020. Appropriate legal, organizational and financial mechanisms need to be ensured for these plans and activities.
- The responsibility and representation of the various sectors need to be better streamlined to improve their accountability.
- Given the increasing importance of primary health care, family doctors and nurses should be trained in environment and health to support preventive action. In addition, the occupational health services should be developed further from their weak position in the current health system.
- The epidemiological knowledge of all health institutions should be strengthened, and especially the Health Protection Inspectorate should be further empowered to be responsible for epidemiological surveillance.
- A supportive environment should be provided to foster the further development of NGOs related to environment and health, and current NGOs should be included in the policy development process in a systematic and regular way.
- Health impact assessment requirements within the environmental impact assessment requirements should be stated more clearly in the appropriate regulation.
- Local authorities should be provided additional human and financial resources to undertake health impact assessment.
- Toxicological training and risk assessment need to be strengthened.
- Exposure data in health risk and impact assessment should be better collected and used.
- Education in environment and health issues, promotion of research and development in environment and health should be made mandatory within the training of health professionals.

## Summary information on the regional priority goals in the report

### Regional priority goal 1: Water and sanitation

- Bathing water quality and the access to public water supply are the priorities in water and sanitation in Estonia. Estonia has 1377 public waterworks; 2% produce more than 1000 m<sup>3</sup> per day, serving 64% of the population. The smallest 358 waterworks (28% of the total) serve only 3780 people (2% of the population). This situation creates severe difficulty in maintaining the required level of control and ensuring water safety.
- Many institutions perform surveillance, an essential tool in controlling waterborne diseases, depending on the type of water.

### Regional priority goal 2: Injuries and physical activity

- Injuries are the third leading cause of death in Estonia. The mortality rates due to road traffic injuries among people 0–24 years old and the mortality rates due to unintentional injuries among people 1–19 years old are above the average for the WHO European Region. The mortality rate for unintentional injuries is especially unacceptably high. However, Estonia shows greater commitment to preventing injury from road crashes in its policies than average within the WHO European Region.
- The prevalence of excess body weight (including obesity) among 11-, 13- and 15-year-old boys and girls in Estonia is lower than the average in the European Region.
- Several sectors have carried out disease prevention activities. The transport sector is mainly in charge of preventing road traffic injuries, but it cooperates with various other institutions within the health sector and the education sector.
- Although efforts have been made in preventing unintentional injuries, there is still no central registry for children's accidents, and there appears to be little coordination among the various services collecting the data.

### Regional priority goal 3: Air quality

- In the indoor environment, Estonia's population has high exposure to indoor air pollution from the combustion of solid fuels in the home. About 82% of children 13–15 years old are exposed to environmental tobacco smoke at home. Exposure to outdoor air pollution is lower than in many other countries of the Region. The city centre of Tallinn and areas in Kohtla-Järve are particularly affected, with a high concentration of industry.
- With a rate of 0.16 of postneonatal deaths per 1000 live births due to respiratory diseases, Estonia has a medium level of mortality but still greater than the countries in the western part of the European Region.
- Estonia also seems to implement all policies for smoke-free public places.
- At the national level, air quality management focuses on achieving compliance with EU directives. Long-term plans still need to be developed to reduce exposure, and many sectors need to be involved.

### Regional priority goal 4: Chemical, biological and physical agents and occupational health

- This area covers food safety, occupational health and noise.

## B. Lithuania

### 1. Key national health characteristics

- Life expectancy at birth (2007): 65 years for men; 77 years for women.
- Infant mortality (2006): 6.8 deaths per 1000 live births
- Major causes of death (2006): cardiovascular diseases (54% of all deaths), cancer (18%), external causes (12%), diseases of the digestive system (5%), diseases of the respiratory system (4%). Suicide accounts for 20% of all external causes of death – the highest rate of all EU countries.
- WHO estimate of the environmental burden of disease: 19%.

### 2. Key effects on children

- Mortality due to road traffic injuries among young people (0–24 years) is 14.9 deaths per 100 000 population (three-year rolling average, with the figure for 2006 being 20.5 per 100 000 population), the second highest in the WHO European Region.
- Mortality due to other unintentional injuries among children (1–19 years old) is well above the median range of other countries in the European Region (figure not given).
- In 2006, infant mortality due to respiratory diseases was 0.35 per 1000 live births (versus 0.57 in 2001).
- The mortality rate among children younger than five years is high at 9 deaths per 1000 live births. For mortality among children younger than five years due to injuries, Lithuania ranks the highest among all EU countries. The mortality rate among children younger than five years due to pneumonia is similarly high.
- Lithuania has a low prevalence of asthma (7%) among children 13–14 years old, and the prevalence of allergic rhinoconjunctivitis symptoms among children 6–7 and 13–14 years old is low and decreasing.
- From 2001 to 2006, alcohol intoxication among children 7–14 years old increased by 14-fold, from 19 to 269 cases, and 7-fold, from 37 to 250 cases, in the age group 15–17 years.

### 3. Identified environment and health priorities

- Water and sanitation  
In 2006, 93% of the population in urban areas had access to an improved water supply in the home but only 57% in rural areas. In 2005, 69% of the population in Lithuania was connected to wastewater treatment facilities: 91% of the population was connected in urban areas but only 51% in rural areas. In 2007, 60% of all inspected drinking-water facilities were identified as having irregularities in water quality. The main quality problem is increased concentrations of iron, manganese, sulfate, chloride and fluorine. About 1 million inhabitants (mostly in rural areas) use groundwater from dug wells for drinking and food preparation; bacteriological contamination and high levels of nitrates are hazards that compromise drinking-water quality.

In 2007, mandatory requirements for the quality of bathing water were complied with in 99% of freshwater zones and in 93% of coastal bathing areas.

- Unintentional injuries to children  
Unintentional injuries are among the leading causes of morbidity and mortality in Lithuania, and Lithuania has one of the highest death rates for unintentional injuries among children (figure not provided).

In 2006, mortality from road transport injuries in the age group 0–24 years was 20.5 deaths per 100 000 population.

After road transport, injuries at home contribute the largest share of mortality from unintentional injuries in Lithuanian children.

- Air pollution  
About 45% of Lithuanian children 13–15 years old are exposed to environmental tobacco smoke at home, and 65% are exposed outside the home.

Lithuania has a high prevalence of dampness in its housing stock, which may support the growth of indoor mould and pose health risks for sensitive population groups. In 2007, 40% of the less affluent population was exposed to damp housing conditions versus 26% of the general population.

With average PM<sub>10</sub> levels of 20.2 µg/m<sup>3</sup> calculated for cities in 2006, Lithuania is among the countries of the European Region with relatively low levels of outdoor air pollution in urban areas. However, more than 97% of the urban population in Lithuania is exposed to levels exceeding the WHO air quality guideline level of 20 µg/m<sup>3</sup>. Automobile transport emissions account for up to 88% of the total air pollution emissions in Lithuania.

#### Further comments and recommendations

- Increases in the number of cars, many of them old, lead to pollution hotspots in urban centres. No functional solutions have yet to be implemented.
- Illegal dumping of waste remains a problem for environmental protection and a potential threat to health.
- Exposure to noise is considered an increasing concern.
- Policies to prevent leisure and home accidents are inadequate.
- Both civil society and government institutions have little awareness of the health risks of climate change.
- Health and environment data are not sufficiently combined and analysed for policy-relevant monitoring and assessment.
- Preventive objectives that reduce environment and health risks are often not explicitly considered to be a public health priority.
- The objectives of the national health programme reflect socioeconomic inequality, but the priorities set by environment and health activities and programmes seldom explicitly reflect this.
- Alcohol consumption remains a major health threat, both for individuals and society.
- Children are a key priority of the public health system.
- Priority-setting in environment and health should be supported by the use of standardized tools.
- Funding of public health and environment and health action is often inadequate, especially in health promotion and disease prevention.

- Policy measures preventing and eliminating exposure to harmful environmental risk factors have to be strengthened, both by acting to reduce the level of pollutants and risk factors and by aiming at behavioural changes within Lithuania's population.
- Surveillance of waterborne and foodborne diseases and their outbreaks needs to be strengthened to ensure timely and reliable information for action on epidemics. Improvement entails linking epidemiological and laboratory data – that is, human and veterinary databases and the introduction of methods that increase specificity.
- Additional efforts should be made to raise awareness of the adverse effects of tobacco smoke in home environments through various means, such as brochures and television spots.
- Conditions in indoor environments, especially biological contamination (dampness and mould), need to be tackled. This entails applying an integrated approach and looking at the problem from the perspective of the built environment, thus taking into consideration indoor air quality and population exposure, home safety and the challenge of providing affordable energy for heating homes in winter.
- Further efforts should be made to develop and implement policies for preventing injuries that result from transport, home and leisure activities and work as well as evaluating their effectiveness.
- Assigning a clear national mandate on compiling data on water quality and using modern European approaches is needed to bring together diverse information on water that can be used to produce health risk assessments related to drinking-water.
- Public campaigns and incentives should be developed to promote the purchase of new cars that conform to minimum environmental requirements and to promote and strengthen public transport.
- Illegal waste dumping should be tackled through public information campaigns on its adverse environmental effects, and economic instruments (such as substantial fines) should be introduced to refinance public authority clean-up work.
- Unhealthy behaviour (such as inadequate nutrition, alcohol consumption, smoking and lack of physical activity) needs to be tackled by health actors in intensive collaboration with other stakeholders.
- The identification of environment and health priorities should be strengthened at the national and subnational levels.
- Efforts should be directed towards identifying all data sources according to the methods underlying ENHIS.

#### 4. *Institutional set-up*

Lithuania is a parliamentary democratic republic and became a member of the EU in 2004.

The main health institutions responsible for addressing health risks related to environmental factors are:

- the Ministry of Health, through its Public Health Department (Public Health Care, Public Health Strategy and Health Promotion divisions);
- the State Public Health Service, along with 10 regional public health centres;
- the State Environmental Health Centre (under the Ministry of Health);
- the Radiation Protection Centre (under the Ministry of Health);
- the State Health Information Centre (under the Ministry of Health);
- the Centre for Communicable Disease Prevention and Control (under the Ministry of Health); and
- the Centre for Health Emergencies (under the Ministry of Health).



- In addition, the State Food and Veterinary Service, which reports directly to the national government, takes all health-relevant protection actions in relation to food items, food processing and drinking-water. Another relevant institution that coordinates work on environment and health in Lithuania is the National Health Board, which was set up in 1998 as an institution for health policy and intersectoral collaboration, coordinating public health–related issues and acting as an advisory body for the Seimas (parliament) and the Government of Lithuania.
- The delivery and infrastructure of the public health services are being reformed to extend services to the local level, and this reform will include environment and health issues. The core of the reform, implemented since 2006, is the establishment of public health bureaus with a wide range of services in a number of municipalities; the bureaus’ objectives are to be closer to the citizens and to provide more effective public health care and disease prevention services. The municipal public health bureaus have major responsibility for environment and health, such as promoting physical activity, healthy living conditions, indoor air quality and healthy lifestyles.
- The regional public health centres are part of the State Public Health Service, which was established under the Ministry of Health in 2000. Ten regional public health centres are subordinate to the State Public Health Service and focus on public health safety control. Each regional public health centre has its branches (divisions) in municipalities.
- At the national level, the Public Health Department of the Ministry of Health is the department that handles environment and health. The work of the Public Health Department is based on the 2002 Law on Public Health Care, which has a specific charter and legal requirement for the government to adopt the NEHAP. In addition, the Department’s work incorporates guidance from the EU health strategy for 2008–2013 and the EU Second Programme of Community Action in the Field of Health 2008–2013, which also identified concrete measures on environment and health. The activities of the Public Health Department are shared among its three divisions: Public Health Strategy, Public Health Care and Health Promotion.
- The Public Health Strategy Division is responsible for formulating the national public health strategy, for implementing it and for annual strategic planning of public health care activities.
- The Health Promotion Division focuses its work on preventing and managing noncommunicable diseases such as cancer, cardiovascular diseases, asthma, diabetes and obesity.
- The Public Health Care Division is responsible for the environmental aspects of health. The Division’s work areas relate to environment and health issues and risk factors, environmental impact assessment and sanitary protection zones. Besides its focus on the environment, the Division deals with:
  - communicable diseases and related threats, emergencies and pandemics
  - injury prevention
  - control of alcohol and tobacco use
  - children’s health
  - inequity in health.
- The State Environmental Health Centre is responsible for public health care and environment and health issues. It merged with the National Nutrition Centre to become the main advisory institution to the Ministry of Health on environmental public health. The Centre focuses on preventing environmental risk factors in the following areas: air pollution, chemical safety, biocides, noise, soil pollution, water pollution, waste management, preventing disease and injuries, child safety, artificial and built environments, spatial planning processes and global environmental issues, such as climate change. The Centre develops guidelines on methods for preventing

environment and health risks and promotes these to public health institutions in the health sector at the state, regional and municipal levels. The Centre is also involved in health education, both in informal continued training and in the health education of the population. The Centre is responsible for coordinating activities on children's health and the environment within the Children's Environment and Health Action Plan for Europe and for reporting this to WHO. Further, the Centre participates in developing and implementing the National Law on Public Health Monitoring and the National Public Health Monitoring Programme and in developing requirements for municipal public health monitoring programmes. It is responsible for the environment and health monitoring part of these programmes, for collecting and analysing data on environment and health indicators and for disseminating this information.

- In addition, the following (non-health) ministries, agencies and institutions directly or indirectly influence environment and health conditions in Lithuania:
  - the Ministry of Environment (Environmental Quality Department, Environmental Impact Assessment Division, Spatial Planning Department, Construction and Housing Department), the Environmental Protection Agency and regional environmental protection departments;
  - the Ministry of Transport and Communications (in relation to road safety, noise, air pollution and the means of transport);
  - the Ministry of Agriculture (State Plant Protection Service);
  - the Ministry of Social Security and Labour and the State Labour Inspectorate (in relation to social protection and occupational health); and
  - the Ministry of Education and Science.
- Public participation in the development of policies related to environment and health services can be channelled through NGOs. Since children are particularly vulnerable to environmental pollution, they are the focus of advocacy efforts to provide them with greater protection from risk factors for poor health. One of the main goals of Lithuania's health care policy is to strengthen the ability of public organizations to cooperate at all levels and to take part in a dialogue with different partners – government institutions and representatives from the private sector – in a way that contributes to improving public health quality. About a thousand NGOs are registered in Lithuania; the activities of nearly half of them are related to health and individual well-being. They represent important stakeholders in forming public opinion, presenting interests and ideas, providing expert opinion and assessing policy measures. Very recently, the government approved an incentive programme for NGOs involved in health promotion activities that aims to encourage public organizations to actively participate in forming and implementing health policies, to raise public awareness and to disseminate information on healthy lifestyles, disease prevention programmes and other fields related to health promotion. Nationally, the role of NGOs is seen mostly in raising awareness, but they may also be active in trying to affect the development and implementation of regulations related to environment and health.

## Further comments and recommendations

- The country's public health infrastructure is established, and the extension of public health services to the municipal level is a very positive development, bringing health promotion, education and targeted services and activities to the local level.
- The complexity of the organizational framework, with its variety of different actors and sometimes unclear responsibilities, could lead to partial overlaps and difficulty in implementing activities and programmes.
- Regional public health centres have little access to available databases and to information at the national level as well as from other regions. This leads to duplicated work and ineffective use of resources – in particular, in response to public requests.
- Information flow and data reporting across the various hierarchical levels and devolved administrations are not sufficiently streamlined. As a consequence, different actors present controversial data on, for example, food-related disease outbreaks.
- The misconception that health sector duties are restricted to providing health care often affects the collaboration of health and other sectors. As a result, other ministries do not see the importance of collaboration.
- The current institutional set-up does not sufficiently enable intersectoral collaboration. In most cases, the Ministry of Health has final responsibility for practical improvement, although the Ministry is not in charge of the regulations that affect conditions related to environment and health.
- Despite the considerable number of health services that extend beyond the occupational scope provided in larger companies, cooperation between the Ministry of Health and the Ministry of Social Security and Labour is not effective, which may result in companies differing in the scope and quality of services provided.
- With regard to emergency preparedness, each ministry has an independently developed plan, but such plans lack sufficient exchange and coordination among the relevant sectors. For example, the Health Emergency Situations Centre is not linked to the Ministry of the Interior, which is in charge of civil protection plans.
- Very few NGOs deal with environment and health. Most of them focus on environmental management or specific environmental topics or represent health-related groups (such as patient groups).
- Within the Ministry of Health, one agency or department needs to be identified to be in charge of all environment and health issues and to coordinate and oversee the activities of other health sector agencies in this field. The Ministry of Health should request clear allocation of responsibilities for environment and health in other ministries, to enable high-level interaction.
- The work of the municipal public health bureaus should be evaluated, to make timely adjustments that ensure that their work is effective. In the meantime, resources should be invested in extending the work of local bureaus in a variety of services and public health areas and in the continuing training and capacity-building of their staff.
- Regular exchanges between – and information platforms with – municipal public health bureaus would also help to increase their effectiveness and to pool resources and capacities. Regional public health centres should all have access to one commonly shared database and a “one-stop shopping” information service, to ensure consistent responses to public health challenges, and should keep all actors updated with recent evidence and data.
- For interministerial working groups that support national priorities for action, staff time needs to be adequately allocated so that these institutional mechanisms do not create an additional burden on the ministries and their normal budgets.
- Among the possibilities for facilitating collaboration between the two actors most involved in environment and health (the Ministry of Health and the Ministry of

Environment) are the following: move one staff member into the other ministry to act as a liaison officer; or create a bilateral environment and health unit with a joint dedicated mandate and funded and staffed evenly by both ministries.

- Collaboration between the Ministry of Health and the Ministry of Social Security and Labour could maximize the effectiveness of health care provision and disease prevention measures in the occupational setting, given the already existing health service infrastructure.
- Occupational health services need to be strengthened by reviewing and discussing technical and educational support and bolstering the core institutional capacity and human resource capability for dealing with the special health needs of working populations and for extending their health promotion services.
- Interministerial exchange and collaboration on sectoral emergency preparedness plans is absolutely necessary to identify potential weaknesses and conflicts in those sectoral plans and to develop a more sustainable and well-coordinated planning mechanism.
- A supportive environment should be provided to foster the further development of NGOs dedicated to environment and health. NGOs should be included in policy development processes and intersectoral committees in a systematic and regular way.

## *5. Tools for management and legal framework*

- Environment and health policy in Lithuania is implemented under the umbrella of several national acts and policy programmes and, in many areas, has adopted EU norms, standards and procedures.
- The main law on public health is the Law on Public Health Care, implemented through a number of by-laws. It has three strands of action in the field of public health: the Public Health Strategy, the National Environment and Health Action Programme and the Children's Health Promotion Programme.
- Important strategic documents are the Lithuanian National Public Health Strategy 2006–2013 and its implementation plans for 2006–2008 and 2009–2013, which also define concrete measures on environment and health. Also, in mid-2008, the government adopted the National Public Health Monitoring Programme for 2008–2009, together with an action plan. This comprises a number of activities on environment and health and focuses on information preparation, analysis and reporting and epidemiological research.

The objectives of the National Environment and Health Action Programme, adopted by the government in 2003, were:

- to strengthen public health surveillance and environmental protection institutions and promote their cooperation;
- to integrate health and environment aspects into the main economic development programmes and strategies;
- to create awareness and understanding among politicians, specialists and the general population of environment and health problems and their solutions; and
- to inform the public about the relationship between environment and health and to promote their participation in decision-making.

The National Environment and Health Action Programme was discontinued after 2006.

- The Children's Health Promotion Programme includes activities to carry out investigations of Lithuania's children's environment and health indicators and to

develop a procedure for information collection for monitoring the implementation of the Children's Environment and Health Action Plan for Europe in Lithuania.

- With regard to food safety and consumer protection, the main laws in Lithuania are the 2000 Law on Food (last amended in 2005) and the 1994 Law on Consumer Protection (last amended in 2007). Although water is considered under the Law on Food, there is also a separate Law on Drinking-water (adopted in 2001) to ensure the safety and quality of drinking-water.
- In the area of road traffic safety and injuries, which is one of the top priorities in Lithuania, several regulations and policies have been instituted in recent years to respond to the challenge. The basic law is the Law on Road Traffic Safety (adopted in 2000). The main objective of this Law is to coordinate the work of all institutions responsible for road traffic and to regulate and enhance road traffic safety.
- In the area of occupational health, the 2003 Law on Safety and Health at Work (last amended in 2008) is the main policy document on safeguarding health in the workforce. In this area, there are several laws and legal acts, many of which have international or European Commission roots.
- In addition, there are several relevant environmental laws and policies – such as the Law on Environmental Protection, intended to protect the environment and to maintain environmental quality for its citizens, the first objective of which was “the right of the population of the Republic of Lithuania to a healthy and safe environment”, the Law on Ambient Air Protection and the Law on Noise Management.
- Aspects of law and policies on economics and funding are also relevant.

Further comments and recommendations

#### Health

- Although environment and health is considered to be an integral part of public health in Lithuania, it currently has no clear official programme, despite public health law requirements.
- Health policies and strategies need to be more focused on preventing risks and environment-related health problems.
- A variety of adequate policy instruments have been put in place, and several policy measures to reduce environment-related risks and to create opportunities for healthy lives in Lithuania have been identified and improved. Currently, the main environment and health challenge is creating integrated policy action that is implemented across sectors.
- Due to the lack of reliable information, the health costs of environmental pollution are not integrated sufficiently into policy-making. Equally, the public health benefits of effective environmental interventions should guide decision-making at the local, regional and national levels.
- Reinitiation of a national environment and health action plan with clear mandates and responsibilities for the actors involved will enable health to be integrated into an official intersectoral programme.
- The Ministry of Health and the government, in general, need to equip regions and municipalities, as well as the executing institutions and agencies involved, with adequate resources to implement, monitor and evaluate the appropriate regulations and orders. New policies and regulations should be evaluated after a specified period of time to assess their performance.
- Adequate and effective enforcement of policies and regulations related to environment and health needs to be considered a key component of future action. This can be done through regular monitoring and a system of mandatory follow-up of their effects on health.

- Increased and more active collaboration and involvement of health officials with the environmental, construction, urban planning and transport planning sectors are needed to develop laws and regulations that enhance the disease prevention potential of healthy environments.
- All available measures need to be applied to reduce the problem of excessive alcohol consumption. These measures need to be closely associated with campaigns on public information about the adverse effects on society of alcohol misuse.
- Increased attention should be paid to urban and regional development projects – including those for transport networks – and the integration of climate change aspects into all government policy-making.

#### Environment

- In recent years, in response to EU requirements, the legal status of environmental protection has been increasingly strengthened. Also, several EU directives relevant to environmental conditions (such as water, noise and chemicals) are being implemented and enforced.
- The monitoring of and reporting on environmental quality and conditions – especially the effective integration of this information and its use for policy-making in environment and health – have not yet been fully developed.
- Current regulatory frameworks for climate change, energy supply and energy consumption in the country need to be upgraded, to address related health aspects.
- More EU funds are needed to improve national infrastructure and activities in environmental protection. Also, the transposition of European Commission requirements into national law needs to continue effectively.
- Collaboration of the various actors in charge of environmental conditions needs to be improved, to provide more effective services. This collaboration needs to be developed further, both at the national level and between national actors (such as ministries and agencies). It also needs to be developed within specific subjects at the national, regional and local levels.
- One common and consistently applied environmental monitoring programme, supported by all stakeholders, should be developed. Equally, the so-called health argument should be more effectively used in environmental protection. The experiences of other countries in the cost–benefit analysis of interventions in environmental policies and economic instruments should be used and evaluated.
- Rising challenges, such as climate change and an uncertain energy supply, need to be tackled through adequate policies and programmes.

#### Economics

- The weak collaboration between environment and health actors and the Ministry of Economy and the Ministry of Finance prevent the use of the potential savings realized by effective environmental and health regulations as an adequate economic argument.
- Economic and taxing strategies and incentives are rarely used to promote or discourage certain healthy or unhealthy lifestyles and behavioural choices. Also, funding mechanisms do not tackle the consumption patterns of the population.
- Tax authorities (Ministry of Finance) require detailed health information and data – which are currently unavailable – to develop economic instruments that help monitor and forecast the impact of industrial activity on health.
- Lack of funds is one of Lithuania’s greatest challenges in environment and health.
- Research and knowledge transfer on the economic consequences of environmental risks and the cost–effectiveness of policy choices need to be increased, to support national policy-making and ensure the long-term sustainability of the decisions made.

- Increased strategic and prospective collaboration with the Ministries of the Interior, Finance and Economy is recommended to identify areas of environment and health work in which – next to health benefits – financial benefits are expected that could justify the use of government funds.
- Strengthening the collaboration of environment and health sectors with clear mandates and responsibilities and a budget allocated from the onset of their work will ensure appropriate monitoring of the future use of economic instruments targeted at industry and consumers.
- The use of EU funds for structural and other types of development should be based on a clear strategy that gives priority to projects that help to protect the natural and environmental resources of Lithuania and – to the extent possible – apply healthy and clean technologies.

## 6. *Intersectoral collaboration*

- Lithuania has a comprehensive set of legislation, regulations and policies to govern environment and health issues. Transposition of EU directives into national law has been almost completed, and several interministerial working groups have been established.
- Cooperation between different sectors for health protection – in particular, the responsibilities and commitments for action – is difficult. In most cases, the Ministry of Health has final responsibility for practical improvement, although it is not in charge of the regulations that affect conditions related to environment and health.
- The main mechanism to enable intersectoral collaboration at the national level is the national environment and health action plan. Since 2009, Lithuania has not had an official Children’s Environment and Health Action Plan for Europe process, and issues related to children’s environment and health have now been integrated into government programmes on child well-being and children’s health promotion for the period 2008–2012 and into the work of the State Environmental Health Centre.
- Intersectoral collaboration in Lithuania has challenges. In most cases of collaboration, only one ministry has final responsibility for reaching targets and making progress. In times of stretched budgets and inadequate staffing, this does not promote and facilitate the active support of the other actors involved. A joint commission with a clear mandate and responsibility – making specific issues a common responsibility and official task of various actors to report on – is only created in specific cases.
- On a practical level, collaboration mainly happens between the Ministry of Health, the Ministry of Environment and the Ministry of Transport and Communications; however, the level of institutionalization or official relevance of collaboration in these projects is diverse. In many cases, collaboration occurs solely at the project level and is often restricted to exchange of information. Information exchange between environmental actors and health actors is ensured by a specific ministerial order.
- The Ministry of Environment collaborates with the regional public health centres, either directly or through its regional environment centres, and with larger local authorities on road traffic issues. The Chemicals Division of the Ministry of Environment has several cooperative arrangements on managing chemicals, which include the Ministry of Health, the Ministry of Agriculture and several subordinate environmental institutions, such as the Environmental Protection Agency and the State Environmental Protection Inspectorate.
- There are several examples of good practice in intersectoral programmes in Lithuania; these involve relevant stakeholders and deal with specific risk factors or a specific environment and health issue of concern. In the field of public health, several strategic

documents and programmes have been prepared – in particular, by the health sector – that imply involvement with other sectors.

- Within the health sector, the Public Health Department of the Ministry of Health is responsible for organizing the development and implementation of health-related intersectoral activities. The public health infrastructure of the public health bureaus creates excellent opportunities for enhanced collaboration on environment and health at the local level.

#### Further comments and recommendations

- Lithuania has no official national programme or policy framework on environment and health designed to bring together activities from different sectors. Intersectoral collaboration, therefore, often takes place in applied and project-related terms only – at a less official level and with a reduced mandate.
- There is no common view of ownership of environment and health issues within the non-health sectors, such as environment, housing and transport. The sectors consider the environment and health issues to be mostly related to the provision of care and, therefore, exclusively the mandate of the Ministry of Health.
- The Ministry of Health usually has final responsibility and commitment for action, although the regulations that affect conditions related to environment and health are beyond its jurisdiction. Other actors are generally committed on a regulatory level and through integration in intersectoral working groups. These actors do not necessarily give priority to collaborating with health actors nor do they evaluate the situations against their health-relevant need for action.
- Although all sectors are open to collaboration and working intersectorally, most targets that relate to environment and health are kept within the health sector despite its limitations in influencing environmental conditions. Targets within other ministries – often those reflecting obligatory tasks – are getting much more attention than intersectoral environment and health tasks, which are not considered to be the core business and for which no evaluation of performance indicators takes place, as with other tasks that are obligatory.
- Nevertheless, in some environment and health areas, good examples of collaboration can be found when well-functioning intersectoral committees have been set up to manage ongoing policy processes, such as road traffic safety.
- Intersectoral cooperation appears to be more efficient at the county level, where practical implementation takes place and responsible actors are closer together.
- Cooperation with NGOs – or the involvement of the public in more general terms – is not taking place systematically in the environment and health sector.
- Reinitiation of the national environment and health action plan and/or active implementation of the Children’s Environment and Health Action Plan for Europe in Lithuania with clear mandates and responsibilities for the actors involved will stimulate the re-establishment and reinforcement of the national programme on environment and health cooperation.
- Collaboration among ministries needs to be strengthened by: (a) common recognition that health is a target and a deliverable for all ministries; (b) clear identification of contributions and responsibilities of the ministries and agencies involved (beyond the legal dimension); (c) evaluation of health-related performance against these criteria; and (d) involvement of high-level officials, in addition to technical collaboration.
- Contributions to collaborative projects related to environment and health should be established as an obligatory duty of each ministry and dealt with accordingly. Also, national priorities for action need to be further reflected by budget allocations for interministerial working groups and staff time, so that collaboration is not affected by



inadequate budgets and made an additional burden on the ministries, to be funded through their normal budget.

- Collaboration between ministries – and all underlying documents, agreements and working groups – should focus on preventing disease and/or creating healthy environments, to optimize the benefits that each sector involved receives from such collaboration. Options for implementing this type of collaboration are, for example: developing common projects with common funding and commonly shared objectives; establishing capacity-building courses on health in all policies and the impact of non-health sector policies on health outcomes; and installing high-level focal points on environment and health in each ministry to regularly discuss collaborative projects and needs.
- The responsibility, accountability and representation of the sectors in environment and health policy-making need to be better streamlined. Task-specific intersectoral working groups with clear mandates and representation of high-level ministry representatives are one suggested way to increase effective collaboration.
- Creating common objectives in environment and health (win–win situations), so as to strengthen the intersectoral collaboration and commitment of the non-health sector to health promotion through environmental conditions, requires the use of multidisciplinary approaches and innovative methods and the use of information and knowledge transfer. This longer-term process would start with making the best use of the information reported to the European Commission, in the framework of the different directives, which is currently far from being exploited sufficiently.
- NGOs should be systematically and regularly included in the process of developing policy, to consider the public’s concerns.

## 7. *Tools for action*

### Monitoring

- Lithuania has extensive environmental monitoring and accessible environment and health information. The country effectively complies with all reporting obligations and is joining international activities on information gathering. However, the information has not been used effectively for assessing potential adverse health effects, and there is insufficient exchange of information.
- Although EU legislation requires advanced monitoring and reporting on environmental hazards, there is no national requirement to monitor and report on environment and health indicators and no regulation on its establishment. There is, however, a Minister of Health order on environment and health indicators and procedures for collecting them. Work on environment and health indicators is part of the National Public Health Monitoring Programme for 2008–2009 and will be part of municipal public health monitoring programmes.
- Despite the monitoring and reporting activities in Lithuania, mainly within existing legislation, regulations are still lacking on an integrated information system for monitoring and evaluation of potential adverse health effects. For example, the National Environment and Health Action Programme was evaluated mostly for administrative aspects, investment project implementation and the use of dedicated funding.

### Environmental impact assessment and health impact assessment

- The Ministry of Environment carries out environmental impact assessment and has set up a division for implementing this. The legal basis for environmental impact

assessment was introduced in Lithuania through the 2005 Law on Environmental Impact Assessment of Planned Economic Activities, which transposed EU requirements into national law. The environmental impact assessment procedures relate to the analysis and assessment of the direct and indirect effects of infrastructural projects on the environment and on human health and living conditions.

- Health impact assessment is considered an integral part of environmental impact assessment, and the consultation and involvement of public health agencies within environmental impact assessment are part of the established mechanism. Public health authorities (regional public health centres and, in some cases, the State Public Health Service) have the right to require screening. If the screening recommendation favours the need for health impact assessment, independent health impact assessment is carried out irrespective of the decision regarding the necessity of environmental impact assessment.
- The State Environmental Health Centre has implemented the APSIS (Information System for Environmental Impact on Health) project. The main objective of the project is to create links between existing databases on environment and health and to make the information available to decision-makers, the public and businesses. Implementation of the EU INSPIRE (Infrastructure for Spatial Information in the European Community) Directive 2007/2/EC and e-health developments will help support the APSIS project.
- Other tools covered in the report relate to capacity-building – including research and the training and development of public health individuals.

Further comments and recommendations

#### Monitoring

- Lithuania has extensive environmental monitoring, mostly in the framework of reporting obligations, but the data collected are not reviewed for health relevance and, subsequently, are not used to regularly assess the environment and health status within the country.
- Lithuania has made progress in introducing a set of environment and health indicators to monitor the progress and potential adverse health effects of environmental policy actions and has been actively involved in ENHIS. However, there is no integrated environment and health information system in place and there is no regulatory framework for its development and implementation for policy evaluation.
- Current surveillance of health injuries and of foodborne and waterborne diseases needs to be upgraded for use in environment and health monitoring and indicator-based assessments in Lithuania. Surveillance of priority environment and health problems – for example, exposure to environmental tobacco smoke, mould and damp and asthma and allergies – should be further developed, with a specific focus on including indoor and built-environment issues not yet considered.
- The information provided to the public through various communication channels and the targeting of different population groups should be strengthened, to raise public interest in adverse environment and health effects and to ensure their involvement in public initiatives for health promotion.
- Monitoring of a national list of priority public health and environment conditions should be put in place with the collaboration and involvement of all stakeholders and data-providing agencies. Also, adequate regulatory mechanisms should be set – for example, in the context of the Law on Public Health Care – to ensure the development and implementation of an environment and health information system that follows the ENHIS approach as an integral part of monitoring public health.

- Due to the lack of a central registry for injuries in Lithuania, injury surveillance should be further developed to better define the burden, causes and effects of injuries, for advocacy, monitoring and evaluation. A web site and database on injuries should be created. Also, surveillance of asthma and allergies and indoor air quality has to be further developed within the country, using the EU Core Health Interview Survey approach as a model.
- Efforts should be made to achieve better partnerships between institutions related to environment and health and journalists and other mass-media employees. Knowledge and understanding on environment and health among general journalists should be improved so that they can communicate reliably to the general population.

#### Environmental impact assessment and health impact assessment

- Environmental impact assessment projects are increasingly required and also reflect the awareness of the public and authorities of environmental effects.
- There is concern about a conflict of interest in the funding mechanism for environmental impact assessment, as the interested party (the party planning to build something) contracts the consultant that carries out the assessment.
- Offers to implement environmental impact assessment can come from a range of professionals, without clear advice on what background and/or experience is necessary as a minimum standard.
- Health impact assessment can be done as an independent assessment if environmental impact assessment is not considered necessary. There are some standard criteria for selecting health impact assessment consultants.
- Clear requirements for the necessary expertise and qualification level of environmental impact assessment consultants have to be set, and a national roster of experts should be developed to help identify adequate and/or interested experts for conducting such assessments.
- Funding mechanisms for environmental impact assessment projects have to be reconsidered to reduce potential conflicts of interest for the assessment consultant.
- Health impact assessment in all sectors and all major policy initiatives should be encouraged and streamlined, and regulatory mechanisms should be developed for its routine use as a powerful health policy accountability tool.
- Analysis and assessment of real-life health effects of environmental policy and regulation should become part of the environmental public health professional practice in Lithuania.

#### Capacity-building, etc.

- Environment and health links are almost exclusively covered by public health courses and are irrelevant in medical studies.
- Continued training for public health professionals takes place to some extent, but does not reach physicians.
- Research on environment and health is clearly inadequate. Environmental health research and education are not strongly developed and are not considered relevant tasks for many non-health actors.
- Given the increasing importance of primary health care, family doctors and nurses should be trained in environment and health links to support preventive actions. Curricula for medical studies – and, in particular, the design and content of the continuing education offered – need to be reconsidered. Collaboration with environmental studies could be an additional option to explore.

- Education in environment and health issues, and the promotion of research and development in environment and health, should be made a mandatory part of the training of health professionals.
- Continued education of medical experts on the linkages between environment and health is necessary in both the national and Baltic context.
- A commonly supported national environment and health research programme, reflecting the interests of health and non-health sectors, should be established.
- Participation of Lithuanian universities and agencies in international and EU projects should be supported and used in a more strategic way to address the main priorities.

## **Conclusions and recommendations**

### Main conclusions

- The regulatory situation for environment and health in Lithuania is rather adequate, and it benefits significantly from the development of EU legal requirements. Although improvements are still necessary in particular areas, the main challenges for Lithuania are to implement and execute the regulations to monitor their implementation and to evaluate the effectiveness of both the regulations and their implementation.
- In early 2009, there was still no official programme on environment and health that provided a basis for national activities or brought together activities from various related sectors. Both a national environment and health action plan and a children's environment and health action plan – initiated as tools to coordinate and support intersectoral work on environment and health – are not yet in place.
- Collaboration between ministries and stakeholders does exist to varying degrees and on different levels. Several intersectoral committees have successfully been set up to manage ongoing policy processes. In general, the Ministry of Health handles environment and health issues, and integration of non-health sectors needs to be strengthened. This is especially relevant in view of the current lack of accountability for action on environment and health in non-health sectors.
- The institutional landscape in environment and health is large. There is a wealth of institutions and agencies taking care, more or less, of specified tasks and activities that relate to environment and health. In some areas, clarity is lacking on the potential overlaps and/or redundancies when different actors work in closely similar areas.
- Environmental and health monitoring is developed at an adequate level, but integrated information and analysis is insufficient and is rarely used as a key argument in decision-making. This is especially true for health impact assessment and cost-benefit analyses in environmental policy-making.
- There is no national list of environment and health priorities that guide the development of an environment and health work agenda, the development of research activities and policy actions or the participation in international projects. Ongoing research and participation in international projects is scattered, and the results are not being sufficiently transferred and used in the country to counteract environment and health challenges.
- Education on environment and health for medical and public health professionals is not yet fully developed. In parallel, information campaigns, directed at the public, on the relevance of environmental issues and related health effects are needed, as are increased support to and integration of NGOs in environment and health.
- Funding and provision of human resources is a key challenge for the environment and health sector in Lithuania. This applies both to the national level, where environment and health tasks are often dealt with on a formal scale only, and to the local level, which in recent years received many mandates and tasks, sometimes without the provision of adequate funds.

## Recommendations

### *Policy and institutional frameworks*

- An official programme on environment and health is to be established to fulfil the legal commitment and to provide a strong and official basis for national action. Such a national programme would have to provide official mandates and tasks to all actors and ministries involved and would therefore increase collaboration, the sense of ownership and accountability for action, especially in the non-health sectors.
- The institutional responsibilities of the many actors in environment and health need to be reviewed and streamlined within the Ministry of Health. Clear terms of references should be developed (including collaborative mechanisms to jointly work on more complex issues) to prevent duplication. The coordination of environment and health activities through one leading institution, such as the State Environment and Health Centre (Ministry of Health) and backed by a high-level intersectoral mechanism, is recommended.
- Specific centres or units that focus on preventive and collaborative activities for environment and health with other sectors should be established in different ministries and should actively contribute to (and be evaluated against) the reduction of environmental risk factors for the population's health.
- Adequate and effective enforcement of policies and regulations related to environment and health needs to be considered as a key component for future action and can be done through regular monitoring and a system that evaluates potential health effects and the effectiveness of such policies and regulations.

### *Human and financial resources*

- To ensure an effective response to environment and health issues, specific and appropriate human and financial resources should be allocated – on a national, regional and local scale – to environment and health services as one of the health system's key cornerstones of preventive action.
- There is a general need for increased integration of environment and health aspects in medical education and continued training for health experts. Given the increasing importance of primary health care, family doctors and nurses, in particular, should be trained in the various aspects of environment and health to support preventive action. In addition, the occupational health services should be developed further.

### *Research and information*

- A national list of strategic environment and health priorities should be developed. This list could inform the public, the mass media, the medical community and the health and environment community. Such a list would be a potential basis for: (a) extending educational profiles and creating strong synergies between education and research; (b) developing a research programme or, at least, a list of research priorities; (c) guiding the participation of Lithuanian experts in international projects; and (d) enabling the government to harvest – through adequate mechanisms – the results of such activities for national policy-making on environment and health.
- Environment and health information needs to be more frequently used as a basis for policy discussions and political decisions. In particular, this requires providing data on the cost-effectiveness of environment and health actions and on the economic benefits of adequate environmental conditions.
- Information and campaigns need to be better communicated to the public, and environment and health aspects should systematically be covered in educational curricula for communities of health experts. Closer collaboration with NGOs is suggested to further increase the voice of the public in environment and health policies.

## Summary information on the regional priority goals in the report

### Regional priority goal 1: Water and sanitation

This goal covers preventing any significant morbidity and mortality arising from gastrointestinal disorders and other health effects by ensuring that adequate measures are taken to improve access to safe water and adequate sanitation for all children.

#### Action:

- Passing and enforcing legislation and regulations and implementing national and international conventions and programmes to reduce the exposure of children and pregnant women to hazardous chemical, physical and biological agents to levels that do not produce harmful effects on children's health.

### Regional priority goal 2: Injuries and physical activity

This goal covers preventing and substantially reducing the health effects of accidents and injuries and pursuing a decrease in morbidity from lack of adequate physical activity, by promoting safe, secure and supportive human settlements for all children.

#### Actions:

- Developing, implementing and enforcing strict child-specific measures that will better protect children and adolescents from injuries at and around their homes, playgrounds, schools and workplaces.
- Advocating the strengthened implementation of road safety measures, including adequate speed limits, education for drivers and children and enforcement of the corresponding legislation – in particular, the recommendations of the WHO world and European reports on road traffic injury prevention.
- Advocating, supporting and implementing child-friendly urban planning and development as well as sustainable transport planning and mobility management, by promoting cycling, walking and public transport, in order to provide safer and healthier mobility within the community.
- Providing and advocating safe and accessible facilities (including green spaces, nature and playgrounds) for social interaction, play and sports for children and adolescents; and reducing the prevalence of overweight and obesity by: (a) implementing health promotion activities in accordance with the WHO Global Strategy on Diet, Physical Activity and Health and the First Action Plan for Food and Nutrition Policy for the WHO European Region for 2000–2005; and (b) promoting the benefits of physical activity in children's daily lives by providing information and education as well as pursuing opportunities for partnerships and synergies with other sectors with the aim of ensuring a child-friendly infrastructure.

### Regional priority goal 3: Air quality

This goal covers preventing and reducing diseases due to outdoor and indoor air pollution as well as contributing to reducing the frequency of asthmatic attacks, to ensure that children can live in an environment with clean air.

#### Actions:

- Developing indoor air quality strategies that take into account the specific needs of children.
- Improving the access of households to healthier and safer heating and cooking systems and to cleaner fuel.

- Applying and enforcing regulations to improve indoor air quality, especially in housing, child-care centres and schools, with particular reference to construction and furnishing materials.
- Implementing the WHO Framework Convention on Tobacco Control, by legislative measures, by drafting and enforcing the necessary regulations and by setting up health promotion programmes that will reduce the prevalence of smoking and the exposure of pregnant women and children to environmental tobacco smoke.
- Reducing the emissions of outdoor air pollutants from transport-related, industrial and other sources through appropriate legislation and regulatory measures that ensure that air quality standards, such as those developed under EU legislation, take into account the values set by the WHO air quality guidelines for Europe. In particular, we call upon car manufacturers to equip new diesel motor vehicles with particle filters or other appropriate technologies to drastically reduce emissions of particles and, to that end, we will continue to develop legislative and regulatory measures as well as economic incentives.
- Involve children, schools and communities in advocating and disseminating information on clean-air policies.

#### Regional priority goal 4: Chemical, biological and physical agents and occupational health

This goal covers implementation: reducing the risk of disease and disability arising from exposure to hazardous chemicals (such as heavy metals), physical agents (such as excessive noise) and biological agents and exposure to hazardous working environments during pregnancy, childhood and adolescence.

##### Actions:

- Passing and enforcing legislation and regulations and implementing national and international conventions and programmes to reduce the exposure of children and pregnant women to levels of hazardous chemical, physical and biological agents that produce harmful effects on their health.
- Monitoring reproductive health indicators, including birth weight, congenital malformations and time to pregnancy, to detect potential hazards to reproductive health.
- Using alternatives to phthalates (such as di(2-ethylhexyl)phthalate) in medical equipment, such as catheters and endotracheal tubes, particularly for long-term use in children.
- Enacting and/or enforcing legislation to protect children from exposure to hazardous chemicals in toys and other products.
- Educating caregivers, teachers and children on preventing accidents, including acute poisoning.
- Passing and enforcing legislation and regulations to protect children from exposure to harmful noise (such as aircraft noise) at home and at school.
- Ensuring the safe collection, storage, transport, recovery, disposal and destruction of hazardous waste, with particular attention to toxic waste.
- Promoting programmes, including those for the adequate dissemination of information to the public, that will prevent and minimize the consequences of natural disasters and major industrial and nuclear accidents, such as Chernobyl, and that take into consideration the needs of children and people of reproductive age.
- Eliminating the worst forms of child labour by applying International Labour Organization Convention 182.

## C. Malta

### 1. Key national health characteristics

- Life expectancy at birth (2007): 77.7 years for men; 82.3 years for women.
- Infant mortality (2007): 6.4 deaths per 1000 live births, considerably higher than the EU average of 4.6.
- Major causes of death (2007): cardiovascular diseases (41%) were the main cause of death, followed by cancer (27%), respiratory diseases (9%) and external causes (5%). Ischaemic heart disease is the single largest killer in Malta, causing 21% of total deaths in 2007. Men and women over 30 have a higher risk of dying from it than the average of the countries in the WHO European Region with very low adult mortality and very low child mortality (EurA).
- WHO estimate of the environmental burden of disease: 14%.

### 2. Key effects on children

- Malta has the highest prevalence of overweight and obesity among children in the WHO European Region; in 2005/2006, 31% of girls and 31% of boys aged 13 years and 28% of girls and 32% of boys aged 15 years were reported to be overweight or obese.
- The standardized estimated annual death rate from leukemia for children younger than 15 years is 45 per million, ranging above the average of the European Region.

### 3. Identified environment and health priorities

- Water and sanitation

The availability of potable water has always been a challenge in Malta. Malta's drinking-water production is based on about 50% groundwater and 50% desalinated water. High-quality desalinated water is mixed with groundwater to meet EU drinking-water quality standards.

Malta has an improved supply of safe water in both urban and rural areas. In 2004, 96% of the population in rural areas had access to an improved water supply in the home.

All schools (100%) have access to a continuous safe drinking-water supply (tap water). There is a legal standard for water supply. All schools and child-care institutions have access to a continuous sanitation infrastructure and a sanitation system with uninterrupted access to water.

In 2005 and 2006, nitrate levels exceeded EU standards in 9 of 13 pumping stations used by the Water Service Corporation, with the highest values reported reaching 168 mg/l. Nitrates in drinking-water predominantly originate from the use of fertilizers in agriculture leaching into the groundwater. Groundwater in Malta also has generally high chloride concentrations as a result of hydrogeological characteristics. Chloride and sodium concentrations in drinking-water have been reduced, but this needs to be improved further.



Microbiological parameters in drinking-water supply systems in Malta have constantly met the requirements, and no waterborne disease outbreaks have been reported in recent years. The national microbial failure rate of the water supply system (based on *Escherichia coli*) is below 1%.

In Malta, more than 98% of households are connected to public sewerage systems; the rest of the households are provided with cesspit emptying facilities. In 2010, with the completion of the third and largest sewage treatment plant, all wastewater will be treated prior to discharge into the sea.

In 2005, only 40% of the coastal zones complied with the mandatory bathing water quality requirements set by the EU. However, in 2007, compliance with EU mandatory standards reached 95%, while compliance with the more stringent guide values increased from 84% to 90%. In this year, most of Malta's bathing water sites are still Class 1 or 2 under the Convention for the Protection of the Mediterranean Sea against Pollution (Barcelona Convention).

In 2008, five health outbreaks warnings due to faecal coliforms were registered.

- Unintentional injuries among children

Malta's mortality rate due to road traffic injuries is lower than in other countries in the European Region, but road traffic injuries nevertheless constitute the second most important cause of fatal accidents and remain a major public health concern.

The Ministry of Education, Culture, Youth and Sport has initiated an intensive educational programme regarding both home and sea safety among schoolchildren 9–15 years old. Parents as well as teaching staff attend talks regarding strategies for improving home safety.

Malta's 11-year-old, 13-year-old and 15-year-old boys and girls range below average among the countries surveyed in the proportion engaging in physical activity at the recommended level (11 years: girls 18%, boys 27%; 13 years: girls 14%, boys 20%; 15 years: girls 13%, boys 19%). Further, Malta has the highest prevalence of overweight and obesity in the European Region.

- Air pollution

Malta is above the average level of countries most affected by asthma prevalence. However, only two postneonatal deaths were registered in children due to respiratory causes during 1997–2001.

During 2006, the EU limit value for PM<sub>10</sub> of 50 µg/m<sup>3</sup> was exceeded at three monitoring stations; the levels were above the limit value on about 30% of the days measured, which is well above the EU limit of a maximum of 10% of days measured.

The national average of sulfur dioxide (SO<sub>2</sub>) concentrations continued to decline between 2005 and 2006, from 9.4 µg/m<sup>3</sup> to 5.5 µg/m<sup>3</sup>, but the annual average concentration of ozone (O<sub>3</sub>) increased from 85.9 µg/m<sup>3</sup> to 102.2 µg/m<sup>3</sup>, with rural areas most affected.

At  $25.4 \mu\text{g}/\text{m}^3$ , the national average nitrogen dioxide ( $\text{NO}_2$ ) concentration remained well below the  $40 \mu\text{g}/\text{m}^3$  EU annual limit value for human health protection in 2006, although the concentration increased from  $22.8 \mu\text{g}/\text{m}^3$  in 2005.

Malta's greenhouse gas emissions increased by 49% between 1990 and 2007 and derive largely from the energy (including transport) and waste sectors. Electricity generation in Malta is largely based on the combustion of fossil fuels, which contributes significantly to air pollution and the emissions of greenhouse gases. The energy sector (including transport) was the main source (89% of total emissions in 2007) of Malta's greenhouse-gas emissions in 2007.

Only 5% of the children 0–14 years old live in homes using solid fuels, so this is not a significant indoor air quality issue in health terms in Malta. Data on environmental tobacco smoke exposure are not available, and little information is available about indoor air quality generally.

#### Further comments and recommendations

- Rainwater is not fully exploited as an alternative water source for secondary uses such as toilet flushing.
- The number of motor vehicles per person remains very high, affecting the risk of road crashes, air pollution and insufficient physical activity.
- Electricity stations began to use low-sulfur fuel in 2003.
- Introduction of lead-free petrol reduced benzene and lead air pollution concentrations.
- Waste dumping sites not equipped with any control system such as gas management systems have been shut down.
- Implementation of action to reduce the exposure of the population to ultraviolet radiation in Malta is high.
- Many efforts are being made to improve food safety. Most of the related illnesses are of foodborne origin rather than waterborne origin.
- Road traffic is the main contributor to noise pollution.
- Children and adolescents are recognized as a priority in environmental and occupational health.
- Despite the increasing recognition of disease prevention and health promotion by the public and by government institutions, the focus is still on health care.
- Environment and health remains a niche in the political decision-making process.
- The capture and use of water captured in rainwater cisterns for specific appliances (toilet flushing etc.) is to be encouraged further and accompanied by adequate information on safety risks and health protection measures to be followed.
- As laying a secondary water network to supply households is not economically feasible, the increase of water catchments for agriculture and groundwater recharge should be further considered.
- Further investment should be made to control and reduce the use of nitrates through an increased awareness-raising campaign for farmers and regular monitoring of the use of fertilizer.
- Concerted efforts are needed for preventing obesity, comprising both nutrition and increased physical activity. Further efforts are required to increase the amount of physical activity at school, at leisure and in transport (walking and cycling).
- The ongoing reform of the public transport system is commendable and could consider emphasizing healthy alternatives, such as rental services for electric bikes that can be used in hilly areas.

- The plan of government institutions using electric cars should be further developed and adopted as soon as possible.
- The Health Promotion Department could further strengthen the prevention of home and leisure injuries.
- Workers on construction sites need to be better trained and informed to prevent falls.
- An indoor air quality survey following up on those done in 2001 and 2003 is of utmost importance for analysing trends in indoor air pollution in schools. Funds should be made available for this survey.
- More prevention campaigns in occupational health are needed such as on falls at workplaces.
- More and improved specialist training in occupational health are needed.
- Noise prevention (ambient noise and residential noise) is to be scaled up both from the health and the environment side.
- A better balance could be sought between implementing the EU agenda and at the same time ensuring a focus on specific national priorities. Exchange between other small island countries or small EU countries could be beneficial.
- A report summarizing the results of a public health survey assessing and describing the public health situation in the country including environment and health would be beneficial to better map public health priorities and concerns.
- Health promotion and disease prevention require more financial support.

#### 4. *Institutional set-up*

Malta is situated in the centre of the Mediterranean Sea close to Sicily. It embraces three islands: Malta, Gozo and Comino. With a population of 409 000 (2007) and a total land area of 316 km<sup>2</sup>, it has the highest population density in the EU, with an average of 1291 people per km<sup>2</sup> in 2006. Malta is a democratic republic within the Commonwealth, having gained independence from the United Kingdom in 1964. It joined the EU on 1 May 2004.

- The Ministry for Social Policy, Health, the Elderly and Community Care is responsible for health in Malta. One parliamentary secretary for health within the Ministry is responsible for health-related questions. Beside health, the Ministry (through a second parliamentary secretary) is also responsible for older people and community care. The Ministry is also responsible for social services, labour and occupational health and safety, including the Radiation Protection Board.
- Health care in the public sector is highly centralized and regulated. Decentralization of the public health care system has been high on the agenda since the early 1990s. Health care is now provided both through a statutory and a private system.
- The health-related part of the Ministry is organized along four main divisions: Resources and Support, Strategy and Sustainability, Health Care Services and Public Health Regulation.
- The Division of Public Health Regulation is the main institution in charge of public health in the country and is organized into five departments: Health Promotion and Disease Prevention; Health Care Service Standards; Environmental Health; Nursing Service Standards; and the Medicines Authority.
- The Department for Environmental Health, created in 2007, is the main institution responsible for environmental and health in Malta. The establishment of a department specifically focusing on the environmental determinants of health has further recognized the importance of environmental risk factors for health at the national level.
- The Environmental Health Department is responsible for programmes that promote the attainment of the highest standards of public health and hygiene. It addresses risk

factors associated with environmental hazards and is responsible for safeguarding the health and well-being of the public by enforcing national and international public health regulations. Regional offices operate in the different parts of the country: six in Malta and one in Gozo. However, the aim is to further centralize all environmental and health facilities in one location. Due to the organizational changes, environmental health officers (previously known as health inspectors) in the regions are being trained in new responsibilities (for example, *Legionella* audits and equipment).

- The department is subdivided into several working areas, including environmental health inspections, food safety and the public health laboratory. The main responsibilities of the Environment and Health Inspectorate are:
  - Enforcement: enforcing public health laws and regulations through advice, education, persuasion and legal action if necessary.
  - Environmental issues: such as tackling complaints of nuisances; field monitoring of bathing areas including sampling of sea water; monitoring the quality of the public water supply from reservoirs; and treatment of rat-infested areas.
  - Food-related issues: such as inspecting food premises; monitoring imported and exported foodstuffs; sampling food, beverages and water; ensuring the quality of food items intended for sale; investigating and following up food poisoning incidents; inspecting public and private institutions such as schools, hospitals and homes for older people with regard to food preparation and/or presentation and the general standard of hygiene.
  - Public health risks: taking action to prevent and control infectious diseases, dealing with various health hazards and taking remedial action for their abatement and contributing to the immunization programme, including enforcing the legal provisions.
- Port Health Services are in charge of the control of communicable diseases, checking importation of food, ship sanitation, inspection of warehouses and the transfer of human remains.
- The Public Health Laboratory, which falls under the responsibility of the Director of the Environmental Health Department, is responsible for undertaking microbiological, chemical and radionuclide analysis of food and environment and health media (such as drinking-water, bathing water and indoor air).
- The Department for Environmental Health is responsible for drinking-water and bathing water quality, indoor air including environmental tobacco smoke, residential noise and food safety. Drinking-water and bathing water and food safety are most strongly emphasized. The issue of noise is foreseen to be scaled up in the future when the Malta Environment & Planning Authority provides noise maps. The Department for Environmental Health will be responsible for drafting the regulations relevant to residential noise.
- The Health Promotion and Disease Prevention Department is responsible for preventing illness and promoting the health and well-being of the population of Malta. It works in partnership with other ministries and external stakeholders to tackle the determinants of illness, particularly to reduce the disease burden caused by noncommunicable diseases. The Department is also in charge of prevention, field investigation and control of communicable diseases. The main focus of prevention activities related to environment and health issues is on food hygiene and noise, with some activities recently started on physical activity promotion. The department has three units: the Health Promotion Unit, Infectious Disease Prevention and Control Unit and Noncommunicable Disease Prevention and Control Unit.

- The Directorate-General for Strategy and Sustainability of the Ministry for Social Policy, Health, the Elderly and Community Care has the overarching view on policy and sustainable development. Its main function is to coordinate within the Ministry and between national and European institutions in all questions regarding transposing EU policies into national policies in public health. The Directorate-General includes the department responsible for health information and research, which gathers and clears all health statistics in Malta.
- The Occupational Health and Safety Authority under the Ministry for Social Policy, Health, the Elderly and Community Care is responsible for ensuring that the physical, mental and social well-being of all workers in all workplaces are promoted and safeguarded. Its functions are completely centralized; there are no regional or local structures as for the Environmental Health Department.
- Many sectors, bodies and institutions cover environmental protection and management. Since 2008, the Tourism and Sustainability Unit under the Office of the Prime Minister has been responsible for environment and tourism. However, there is no parliamentary secretary for the environment under the Office of the Prime Minister. The Malta Environment & Planning Authority is the main agency responsible for environmental protection, regulation, monitoring and enforcement.
- The Tourism and Sustainability Unit under the Office of the Prime Minister is responsible for all issues related to environmental EU policies and multilateral agreements. They rely on the expertise of the Malta Environment & Planning Authority but are the competent authority for transposing international regulations and agreements and the counterpart in international conventions, etc.
- The Environmental Protection Directorate is involved in formulating, implementing and enforcing environmental legislation and policy environmental legislation and policy and for integrating environmental considerations into other areas of government policy. The Directorate is organized into five units.
  - Unit A is responsible for environmental permits and compliance auditing for industrial and waste management installations.
  - Unit B (Environmental Assessment Unit) coordinates the Environmental Protection Directorate's assessment of development projects and role in related matters. In particular, the Unit manages the environmental impact assessment and appropriate assessment processes, technical assessment of environmentally relevant development proposals, and processing of applications for outside development zones.
  - Unit C coordinates activities, policy and strategies related to the response of the Malta Environment & Planning Authority in ecosystems management, nature protection, genetically modified organisms and biosafety.
  - Unit D coordinates the input of the Malta Environment & Planning Authority in the following policy areas: air quality, waste management, radiation, noise and soil. Unit D also administers the transfrontier shipment of waste, registers packaging and producers of waste electrical and electronic equipment and manages the air quality monitoring network.
  - Unit E coordinates the input of the Malta Environment & Planning Authority on climate change, energy, water, marine strategy and coastal zone management. Unit E is also responsible for administering the national emissions trading scheme and coordinates the Environmental Protection Directorate input on the EU Seveso II Directive.
- The Malta Environment & Planning Authority is solely in charge of monitoring chemicals in the environment. The responsibility for management of and legislation on

chemicals has been transferred to the Malta Standards Authority. The Malta Environment & Planning Authority forwards complaints about noise levels to the Environmental Health Department.

- Waste is one of the largest working areas of the Malta Environment & Planning Authority in environmental management. This is mainly due to the large number of EU directives in this field. The Malta Environment & Planning Authority is responsible for providing the government with the policy assistance and for transposing EU legislation into national policies. The Malta Environment & Planning Authority is also responsible for regulating the transport and shipment of hazardous waste. It also collects all data on waste.
- Within the Authority's Development Planning Directorate, the Plan Making and Policy Development Unit of the Forward Planning Division is responsible for planning, transport and cultural heritage and is also in charge of drafting the relevant strategic policies.
- Other departments, authorities and sectors include: the Department of Information; Malta Tourism Authority; Ministry of Education, Culture, Youth and Sport (which is tackling obesity prevention through physical activity and nutrition at schools); Malta Sports Council; Ministry of Infrastructure, Transport and Communications; Malta Transport Authority; Water Service Corporation (responsible also for potable water monitoring and quality control); Enemalta Corporation; Ministry for Resources and Rural Affairs (the main actor for policies related to climate change); Malta Resources Authority (the Water Directorate of the Malta Resources Authority is the regulator for water resources, responsible for regulating water and wastewater operations); Malta Standards Authority (incorporating the Regulatory Affairs Directorate, which covers food, chemicals, cosmetics, consumer products, industrial products and pesticides and is responsible for reporting on the EU Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) regulation; Ministry for Justice and Home Affairs (in charge of preparing contingency plans for all human-made and natural disasters); Ministry of Finance, the Economy and Investment; local communities; and Office of the Commissioner for Children (involved in obesity prevention and safety in school and leisure environments and other projects relevant to children's health and well-being).
- The private sector and NGOs and civil society are also involved, notably SahnAmbjent (Health and Environment), part of the International Society of Doctors for the Environment that aims to promote environment and health.

#### Further comments and recommendations

- The Department for Environmental Health within the Public Health Regulation Division of the Ministry for Social Policy, Health, the Elderly and Community Care is the main institution responsible for environment and health in Malta.
- An interministerial committee is responsible for the National Environment and Health Action Programme, which ended in 2006.
- Qualified personnel in environment and health are lacking. Long recruitment procedures increase the problem of having adequate staff. The Public Health Laboratory is also relatively understaffed.
- Preventing noncommunicable diseases is gaining more importance as a priority in health promotion.
- Nutrition is a priority of the Health Promotion Department. The promotion of physical activity is gaining more importance through the employment of one dedicated staff member dealing with physical activity within the Health Promotion Department.

- Clinics, private physicians and laboratories gather HIV data through the statutory notification of cases.
- The Occupational Health and Safety Authority currently does not have sufficiently qualified personnel to analyse the psychosocial parameters of work safety.
- The role of physicians in the environment and health process is not well defined; they are mainly seen as the interface with civil society but have no specific involvement in or awareness of environment and health.
- Many sectors, bodies and institutions cover environmental protection and management. The shift of responsibility for the environment dossier to the Office of the Prime Minister, however, has helped to integrate the functioning of all services responsible for environmental management.
- The current plan by the Tourism and Sustainable Development Unit under the Office of the Prime Minister to develop an overview of all activities and programmes carried out in accordance with the sustainable development strategy is a good approach.
- The Malta Environment & Planning Authority is the competent agency responsible for protecting the environment. Waste is the largest working area within the Malta Environment & Planning Authority in environmental management. The Malta Environment & Planning Authority needs a larger staff complement in environmental protection and management.
- The coordination of policy on climate change prevention, promotion and information among the sectors is not yet fully operational.
- Since the Malta Transport Authority was created in 2002, the Malta Environment & Planning Authority and the Transport Authority have both been responsible for transport-related issues, and the respective competencies are not always clearly defined.
- The education sector is strongly emphasizing on physical activity, healthy nutrition and preventing injuries.
- Sport facilities in schools are being made available for the general public before and after school hours. This is a very positive initiative.
- Social inclusion is being more and more stressed when promoting physical activity.
- Veterinary laboratory services require more human resources.
- Local governments are given the responsibility to implement environment and health measures and would benefit from increased resource allocation (capacity and expertise as well as financial resources).
- Youth involvement and participation in questions of public concerns is being steadily improved and promoted.
- Malta has many environmental NGOs but only one association dealing specifically with environment and health.
- The involvement of NGOs in public consultation processes has increased in recent years.
- The Department for Environmental Health would benefit from additional staff, including a specialist on indoor air quality.
- Exchange and collaboration between the Health Promotion Department and the Environmental Health Department can be further strengthened.
- It is recommended that the health sector be routinely involved in environmental impact assessment reviews.
- The Occupational Health and Safety Authority could undertake further proactive surveillance of working places to prevent accidents at work (although Malta's 40:60 ratio of proactive and reactive inspection is higher than the EU average).
- The recruitment of more qualified staff for analysing psychosocial parameters at work is recommended.

- Physicians should ideally be more actively involved in preventive action – better information generated by government authorities dealing with environment and health and direct collaboration with medical societies would help in this task.
- Better representation by transport and agricultural sectors and local government on the Intersectoral Committee to Counteract Obesity is recommended.
- The new national environment and health action plan should be fully implemented with NGO participation.
- Despite the increased integration of all services responsible for environmental management, more integration is recommended. For example, more environment and health promotion activities should be better coordinated between the Environmental Health Department and the Health Promotion Department.
- Staff working on environmental management within the Environment Protection Directorate of the Malta Environment & Planning Authority should be increased.
- The responsibility for issues related to water quality should be further streamlined.
- Tests on groundwater parameters should be carried out independently from water service providers.
- The application of sanitary regulations in the construction of new buildings should be better defined and delineated.
- Better defining and delineating the competencies of the Malta Transport Authority and the Transport Planning Department of the Malta Environment & Planning Authority and reinstating regular meetings and exchange of information will strengthen cooperation between the sectors.
- It is recommended that the assessment report of the Valletta Controlled Vehicle Access be published as soon as possible.
- Better use of the urban Improvement Fund intended for local communities could promote sustainable transport through the better use of facilities for pedestrians instead of using it for providing parking spaces. The promotion of active transport should be increased with a particular focus on walking as a convenient and healthy mode of transport.
- The reform of the public transport system will attract the interest of more customers.
- Stronger representation of the environment sector on the board of the Malta Environment & Planning Authority is recommended.
- The reorganization of the Malta Transport Authority and strengthening its interaction with other ministries and bodies should be given priority.
- A poison control centre needs to be established.
- For the more detailed assessment of physical activity levels in adults in Malta, using the Global Physical Activity Questionnaire would certainly be very helpful.
- More synergy and cooperation between the education sector and the Health Promotion Department would be beneficial.
- Further financial and technical support would help municipalities to implement the requirements of EU regulations at the local level.
- It is important that experiences gained by youth representatives through participation in national and international forums be transferred to other young people.
- Further institutionalization of NGO participation in decision-making processes is recommended.

## **5. Tools for management and legal framework**

Environment and health policy in Malta is implemented under the umbrella of several national acts and policy programmes and has adopted EU norms, standards and procedures in many areas. The EU framework has been transposed into national law in almost all the areas for which EU regulations and guidance exist.



- The Public Health Act is the main legislation regulating public health in the country and gives the Minister the right to adopt legislation. The current Public Health Act mostly focuses on infectious diseases.
- The Department for Health Promotion and Disease Prevention has drafted a strategy for preventing and controlling noncommunicable diseases. The objective of the strategy is to develop a vision for the long-term prevention of noncommunicable diseases, stressing the need to promote healthy lifestyles.
- The Health Vision document drafted in 1995 and revised in 1998 called for an interministerial working group to discuss a health in all policies approach. The working group has not been established, but as part of EU accession, an informal network of the directors responsible for EU-related affairs of various ministries was created. This is used as a framework for interministerial exchange, including a health in all policies approach by reviewing other ministries' policies on health. *Health vision 2000* listed coronary heart disease, stroke, lung cancer, breast cancer, diabetes, mental health and road crashes as priorities. Asthma was subsequently added to the list. Smoking, obesity, high blood pressure, serum cholesterol and inadequate physical activity were identified as the most important risk factors. The achievements and impact of the document have not been formally evaluated. An update of the plan based on its evaluation would be beneficial for drafting a public health strategy.
- The first National Environment and Health Action Plan (NEHAP) in Malta was launched in 1997. Although the challenges have been and continue to be great and there is much yet to be done, most of the targets committed to then were reached. The NEHAP is being revised. The new NEHAP, 2006–2010, is intended as a policy framework document for implementation across government departments and major sectors. Many of the actions proposed in the NEHAP fall under the responsibility of national and local authorities other than those responsible for environment or health, and implementation therefore requires ongoing advocacy and continued collaboration between sectors. The priorities identified in the new NEHAP include protecting public health by ensuring clean indoor and outdoor air, preventing accidents and injuries and reducing obesity by providing supportive environments. Two new sections, on chemicals and climate change, have been introduced.
- Malta has no environmental strategy, plan or policy. The most important act for the protection of the environment is the Environment Protection Act and several specific legal notices and acts that transpose EU directives. Malta has nevertheless ratified and adhered to several multilateral agreements and EU conventions focusing on environmental protection and management. Although the Environment Protection Act mentions health in terms of how pollution can affect human health, no environmental policy clearly states and addresses the relationship between health and environment.
- The enabling act for environmental protection is the Environment Protection Act of June 2002. Although the Act defines pollution as “the direct or indirect introduction by man into the environment of substances, organism, genetic material or energy that cause or are likely to cause hazard to human health, harm to living resources or to ecosystems, or damage to amenities, or interfere with other legitimate uses of the environment”, it does not clearly link the environment and its effect on health.
- Many other legal instruments protect the environment. Legal instruments have long been the mainstay of Malta's environmental policy, and the EU environmental *acquis communautaire* has swelled this body of legislation to about 250 legal instruments under the umbrella of the 2002 Environment Protection Act. Malta's accession to the EU, and thus the transposition of the EU *acquis communautaire* into Malta's legislation, has led to the publication of many subsidiary legal instruments. Malta has ratified many multilateral environmental agreements and is a party to many multilateral

environmental agreements since before it joined the EU. Malta had fewer obligations to comply with before joining the EU, but EU membership has required Malta to adopt more stringent obligations.

- The process of developing a national sustainable development strategy was launched in 2002 before EU accession. The Cabinet has approved a reviewed version of the strategy, and the Prime Minister will launch it in the near future. A Commission for Sustainable Development was set up in 2002. The Commission, however, has not met since March 2008, when general elections took place. The environment, the economy and society are major elements of the strategy, which also contains sections on cross-cutting issues and on implementation. Health is mentioned to a limited extent, and there is no specific chapter on environment and health. Health is represented through the Directorate-General for Strategy and Sustainability of the Ministry for Social Policy, Health, the Elderly and Community Care and the Department for Environmental Health. The strategy is considered to be an innovative approach towards integrating different sectors in sustainable development and indicates that it should be monitored on a yearly basis.
- Malta is party to many multilateral environment agreements.
- The Environmental Impact Assessment Regulations regulate environmental impact assessment, which is under the responsibility of the Malta Environment & Planning Authority.
- The legal instruments on bathing water quality cover the whole population and in particular potentially highly affected subgroups and children. The main national instruments governing drinking-water and bathing water are: Quality of Bathing Water Regulations; Management of Bathing Water Quality Regulations; Swimming Pools Regulations; Swimming Pools (Amendment) Regulations; Control of *Legionella* Regulations; Registration of Cooling Towers and the Evaporative Condensers Regulations; Water Framework Directive (2000/60/EC), transposed into Malta's legislation as the Water Policy Framework Regulations; Quality of Water Intended for Human Consumption Regulations; and Registration of Private Water Supplies Intended for Human Consumption Regulations. In addition, several EU and international instruments apply, including Council directive 2006/7/EC concerning the management of bathing water quality, Council directive 2006/118/EC on the protection of groundwater against pollution and deterioration and the Nitrate Directive 91/676/EEC.
- Malta joined the Child Safety Action Plan project as a participating country for the second phase from 2008 to 2010. They have begun to work through the nine-step Child Safety Action Plan development process and are in process of completing the two Child Safety Action Plan assessments, which form part of the assessment step in the child safety action planning process and will be used to produce a child safety report card and child safety profile.
- The Children's Manifesto by the Office of the Commissioner for Children, which reflects the situation at the time it was published in February 2008, identified the provision of safe environments where children can play and participate in outdoor activities as a priority.
- In January 2008, the Healthy Eating Lifestyle Plan entered into force to be implemented by schools in Malta and Gozo. The main goals of this Plan are "to ensure that Maltese schools deliver a holistic education; to make provision for the setting up of the necessary frameworks, resources and support needed by Maltese schools to help students adopt healthier patterns of living".
- The National Sports Strategy 2007–2010 mainly covers physical activity in relation to schools by setting the requirements for the quality of outdoor areas in schools and the requirements for accessibility of all groups to open spaces enabling physical activity.

- Air quality is regulated by the Tobacco (Smoking Control) Act, Clean Air Act (which is to be repealed; new draft legislation is pending cabinet approval), WHO Framework Convention on Tobacco Control, Smoking in Public Places, Tobacco Products and Consumption Regulation, Air Quality Framework Directive and daughter directives.
- Other relevant acts and strategies include: the Occupational Health and Safety Authority Act (under which various EU directives have been transposed into national legislation); the Community Strategy, 2007–2012, on Health and Safety at Work: Improving Quality and Productivity at Work; the National Environment Radioactivity Surveillance Plan for Malta; the Control of Major Accident Hazards Regulation under the Occupational Health and Safety Authority Act; the Pesticide Control Act; REACH; the Food Safety Act; the Food and Nutrition Policy; the Malta Transport Authority Act; the Malta Resource Authority Act; the Structure Plan; and the International Health Regulations, which provide a legal framework for coordinating the management of events that may constitute a public health emergency of international concern and will improve the capacity of all countries to detect, assess, notify and respond to public health threats, including chemicals.

#### Further comments and recommendations

- Since the national health policy document, *Health vision 2000*, was published in 1998, no new public health strategy has been developed yet. The document would have offered an opportunity for an integrated approach to environment and health, which were not, however, sufficiently integrated in the policy.
- The planned strategy on noncommunicable diseases is a good initiative, as noncommunicable diseases have not been sufficiently recognized.
- The current Public Health Act mostly focuses on infectious diseases.
- At the project level, Malta's Environmental Impact Assessment Regulations address health effects as part of the assessment of the likely effects of a proposed development project on humans. At the policy level, however, no specific measures are in place to make policies accountable for their health effects.
- There is no overall national policy for preventing injuries. There are only specific national policies for road safety and occupational injuries in the framework of the occupational health and safety policy. Data collection on injuries has only started and is still dispersed.
- Although the Environment Protection Act defines pollution as a possible hazard to human health, the Act does not clearly link the environment and its effects on health.
- Malta has ratified many multilateral environmental agreements.
- Development and approval of policies and strategies is a lengthy process, and there appears to be a general lack of policy evaluation. In addition, no formal regular health reports are published, whereas a regularly published report on the status of the environment contains a chapter on environment and health.
- Even before the NEHAP was published, each sector had obtained endorsement for their actions at the Permanent Secretary level, and the implementation of the NEHAP is underway.
- The NEHAP has been an influential tool for formulating and sharing responsibilities in environment and health.
- Responsibilities in building regulations and sanitation are disseminated across different ministries and bodies.
- General expenditure on environmental management and protection has increased in recent years.
- Environment taxation policies have become an increasingly important tool.

- Activities at the local level are being subsidized, but the funds target very specific topics.
- Health promotion and disease prevention and other relevant health issues not covered by the Public Health Act should be addressed, possibly through legal instruments under this Act.
- A comprehensive public health strategy giving priority to health promotion and disease prevention would be a beneficial guiding instrument. The strategy should link to existing strategies and action plans of the health sector and other sectors relevant to health.
- An environmental strategy linking to health would be beneficial.
- In general, shorter time frames should be established for the drafting and approval of policies and strategies such as the energy policy and the draft policy on transport of school children and the adoption of the NEHAP.
- A formal budget allocation for the implementation of the NEHAP is strongly recommended.
- The possibility of merging local activities supported by both the World Meteorological Organization and WHO should be exploited.
- Support is needed from government to sustain and enhance the collection of climate data and to disseminate timely information and alerts issued by the Meteorological Office to all relevant authorities.
- It is recommended that the Food and Nutrition Policy (1990) be updated.
- National policy development for unintentional injuries deserves greater attention.
- A national action plan on desertification to be elaborated in collaboration between the environment and the agricultural sector would be beneficial to increase the awareness and coordinate actions towards mitigating climate change.
- Policy documents equipped with the right implementation structure would facilitate transforming theory into action.
- Evaluation of policies should be given a stronger focus. For example, evaluating the environmental tobacco smoke regulation would be beneficial to better understand the changes in exposure to environmental tobacco smoke.
- Support is required from WHO and other relevant institutions to provide Malta with tools to assess the economics of various types of health behaviour such as smoking and obesity.
- Physical activity needs to be in focus in addition to classic sport and links between the sports, health promotion and transport-related sectors need to be strengthened.
- Health promotion deserves more financial support.
- Malta would benefit from more human resources with specific training for applying for EU funds.

## 6. *Intersectoral collaboration*

- Intersectoral collaboration in Malta is ensured through a large number of appointed intersectoral committees responsible for various health and environment issues. The committees can function either as decision boards, consultative boards or advisory boards. Besides appointed committees, collaboration relies much on personal communication and contacts. Informal mechanisms of information exchange between the health and the environment sectors have been established. However, the degree of intersectoral collaboration varies from one environment and health area to another.
- The economic and finance sectors are becoming increasingly involved in health-related questions. For example, economics and finance are involved in planning responses to

pandemic influenza and to preventing obesity. The financial impact of health interventions is increasingly being recognized.

- An Interministerial Committee on Environment and Health chaired by representatives from the health and environment ministries was set up, with representation by key players from various sectors including education, tourism, transport and young people. The main role of the Committee is collaborative in assisting the ministry responsible for health in reviewing and implementing the NEHAP.
- An Intersectoral Committee to Counteract Obesity has been established specifically to address the increasing problem of obesity in the country.
- The Clean Air Consultative Group, an ad hoc working group, was appointed to make recommendations for new legislation under the Public Health Act to replace the Clean Air Act that will be repealed soon. The working group comprised representatives from all relevant sectors, including environment, planning, health, industry and transport.
- A local committee on transport, health and the environment has been set up to tackle air pollution due to transport through a multisectoral approach. The committee, which represents three ministries, has prepared short-term action points that are to be considered for inclusion in the National Environmental Strategy and Action Plan.
- The Malta EU Steering and Action Committee is a high-level forum in which all government ministries and political parties are represented together with NGOs, civil society and the permanent representative to the EU. It functions as an advisory body to the Interministerial Committee on Environment and Health.
- Other relevant committees and groups include the Board of the Malta Environment & Planning Authority, the Coordinating Body of the Malta Resources Authority, the Education Health Committee, the Radiation Protection Board, the Civil Protection Scientific Committee, the Integrated Pollution Prevention and Control Committee, the Pesticides Control Board, the Food Safety Commission and the Climate Change Committee.

#### Further comments and recommendations

- Malta has many intersectoral boards and committees.
- Intersectoral collaboration, however, also relies on informal networking.
- All strategies drafted by an institution undergo a public consultation involving all sectors and ministries: for example, energy documents, environment documents and rural development plans.
- The degree of collaboration varies from one environment and health issue to another.
- Good collaboration is ensured at the international level.
- More formalized procedures for intersectoral collaboration and better clarification of roles are recommended.
- There is room for more formal collaboration between the Port Health Service and the Maritime Authority.
- Cooperation should be increased between the health and the transport sector in preventing road traffic injuries.
- Better collaboration between the Ministry of Education, Culture, Youth and Sport and the Environmental Health Department in preventing injuries would be of benefit.
- International support for an economic assessment of obesity would contribute largely towards further analysing and addressing the obesity problem in Malta.
- The Intersectoral Committee to Counteract Obesity is an excellent platform for promoting intersectoral action. Its impact could be increased by better alignment between the sectors to reach a common understanding and by allocating funds for specific activities.

- The underrepresented sectors on the Intersectoral Committee to Counteract Obesity such as transport, agriculture and local government should be addressed.
- Enhanced collaboration between the health and environment sectors in combating climate change is required.
- Information exchange and collaboration between the Transport Authority and the Malta Sports Council on the promotion of cycling and walking could be improved; this exchange could also be established with the Intersectoral Committee to Counteract Obesity.

## 7. *Tools for action*

### Environmental impact assessment and health impact assessment

- The Environmental Impact Assessment Regulations of 2007 regulate environmental impact assessment, and the Malta Environment & Planning Authority is responsible. Environmental impact assessment is intended to identify, describe and assess appropriately, based on each individual proposal for development and in accordance with the provisions of the environmental impact assessment legislation, the direct and indirect effects on fauna and flora, soil, water, air, climate, landscape and the non-living components of the environment, cultural heritage and humans.
- The environmental impact assessment process is not a free-standing process but forms part of the development permit process. Each construction and development project needs a permit independently of whether it requires environmental impact assessment. The Malta Environment & Planning Authority carries out the screening process that determines the need for environmental impact assessment for a specific development proposal, and the decision is made public. For the projects potentially requiring environmental impact assessment, the Malta Environment & Planning Authority conducts the scoping process through a consultation process with other government and civil organizations and the general public.
- Private accredited companies (employed by the developer) perform the environmental impact assessment in accordance with the terms of reference of the Malta Environment & Planning Authority.
- The Director of Environment Protection (and, on behalf of the Director, the officer in charge of the environmental impact assessment dossier) has the responsibility and choice of informing other departments and agencies of the government that are identified as statutory consultees on individual environmental impact assessment projects.
- The competent authority for strategic environmental assessment is an audit team set up under the Office of the Prime Minister. The strategic environmental assessment mainly adopts the environmental impact assessment mechanisms at the plan and programme levels. The Malta Environment & Planning Authority assists the audit team with relevant assessments, but the audit team is responsible.

### Monitoring

- There is no annual report on the health situation of the population. Health registries are available on death, obstetrics, cancer, hospital activity and admissions, congenital anomalies and transplantations. Some additional surveys are undertaken to establish the health situation of the population. The Health Interview Survey has been carried out twice (in 2002 and 2008). Based on the methods of the European Health Survey

System, the Survey is planned to take place every five years and will be the most regular source of information on the health status of Malta's population.

- Various actors at different stages of the water distribution are responsible for monitoring drinking-water. The water utility company has the obligation to monitor the water at the borehole, reservoir and tap level. The Environmental Health Department has the obligation to notify the utility company about samples taken in public places such as hotels and exceedance of limit values.
- The Environmental Health Department investigates drinking-water in cases of complaints by the population or by the utility company and runs an audit monitoring of the water under the responsibility of the water utility every six months.
- The Environmental Health Department performs two monitoring programmes for service water each year in collaboration with the regional health inspectors and the Public Health Laboratory. Potable water samples are collected both from sources and from the public mains system at fixed consumer outlets in every village. These regular weekly samples are collected for microbiological and chemical testing.
- The laboratory of the Institute of Water Technology undertakes routine monitoring as part of its role in the Water Services Corporation. Each month, at least one water sample is collected from each village in Malta and Gozo and from each distribution reservoir and other water sources such as boreholes, pumping stations and reverse-osmosis plants. The samples are analysed chemically and microbiologically.
- Private users are responsible for *Legionella* control in accordance with the 2006 regulations on *Legionella* control.
- The surveillance system at the Disease Surveillance Unit of the Public Health Department is based on statutory notifications from physicians and laboratories, which are obliged to report on suspected or confirmed cases of listed communicable diseases. These include sporadic and outbreak cases, and hence the system is set up to be able to detect outbreaks. Demographic details of all cases are collected, including age and sex.
- The Environmental Health Department analyses two microbiological parameters for bathing water and the Malta Environment & Planning Authority three physiochemical parameters for bathing water. The Environmental Health Department takes the microbiological samples during the bathing season, starting from the third week of May until the third week of October. Monitoring is performed on a weekly basis in 87 monitoring locations in the south, central and north regions and on the islands Comino and Gozo. The public is informed of the monitoring results.
- Bathing water quality monitoring in swimming pools follows WHO requirements. Establishments with swimming pools need to have water safety plans, identifying the access, ensuring the appropriate signing and first-aid facilities and recording accidents. The owner is responsible for monitoring microbiological, physical and chemical parameters, controlled by the Environmental Health Department.
- Malta has a limited standardized data collection system for accidents and injuries locally. Various data related to accidents and injuries are held at the Department for Health Information and Research in hospital-based information systems and through the Occupational Health and Safety Authority reporting systems. The police collate improved and more detailed information on road crashes and related injuries in collaboration with the Malta Transport Authority and the National Statistics Office. The Department for Health Information and Research has begun to set up a comprehensive national accident and injury database focusing on leisure and home accidents.
- Various regulations require notification of work-related incidents, and various government entities are responsible for this. Locally, data are obtained from various government entities including the Occupational Health and Safety Authority, the National Statistics Office and the Department of Social Security. Occupational injury

data collection is based on two sources – the national insurance system and the employer, who has the obligation to report occupational accidents to the Occupational Health and Safety Authority. The same system is in place for reporting occupational diseases. However, comprehensive data on the burden of disease and mortality in occupational settings are not available.

- The National Statistics Office has collected self-reported data on physical activity and obesity for adults for the years 2002 and 2007 through the Health Interview Survey, but the data collected do not allow for analysis of overweight, obesity and physical activity by socioeconomic status.
- As one of the initiatives to counteract obesity, the Ministry of Education, Culture, Youth and Sport has implemented a body mass index surveillance system in secondary schools, and there are plans to develop this further as a regular audit system.
- The Malta Environment & Planning Authority is responsible for outdoor air monitoring. The national monitoring system covers two types of monitoring: active real-time monitoring for ozone, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds, gaseous mercury, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) and meteorological variables and passive monitoring for sulfur dioxide, nitrogen oxides, benzene, ethyl benzene, toluene, xylene, *o*-xylene, ozone, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>) and lead.
- The Environmental Health Department is responsible for indoor air monitoring, but very little monitoring is done. Nevertheless, the Department has studied indoor air pollution in government primary schools, including 16 in 14 localities in Malta and 2 in Gozo.
- Other (often limited) monitoring, inspection and related activities cover food safety, workplaces, pest control, radiation, noise, chemicals and soil.

Other tools covered in the report relate to communication and public awareness and capacity-building and education.

#### Further comments and recommendations

- At the time of the review, the Environment Protection Directorate within the Malta Environment & Planning Authority was greatly understaffed.
- In general terms, it is felt that Malta's knowledge in the health, landscape, economic and geotechnical impact aspects of environmental impact assessment is weak.
- The involvement of environment and health specialists in the environmental impact assessment process has been strengthened since 2005, but it is still not institutionalized; the Malta Environment & Planning Authority chooses the consultees.
- No regular formal training on environmental impact assessment is available in Malta.
- Health impact assessment is not sufficiently covered at the policy level.
- There is no annual report published on the health situation in Malta.
- There is limited standardized data collection for accidents and injuries, and there are no comprehensive data on occupational injuries and mortality.
- There are no published data on obesity and overweight by socioeconomic status.
- Climate change is increasingly being recognized at the public and political level.
- Air quality monitoring data from the Malta Environment & Planning Authority are available in real time on the Authority web site. However, no panels in the cities inform when air quality limit values are exceeded, particularly for ozone.
- Malta's population is aware and/or concerned about environmental risk factors to health to a limited extent.
- Most disease prevention spots aired on local television stations are not free of charge.



- Although occupational health is well developed at the institutional level, it is not sufficiently covered by the public health curriculum.
- The Medical Association of Malta rarely discusses environment and health.
- Research on environment and health at the national level has been not sufficiently funded.
- Health impact assessment should be made compulsory within environmental impact assessment.
- Health impact assessment should be given more importance within strategic environmental assessment.
- Greater attention needs to be given to national surveillance on injuries and to collecting baseline information for implementing evidence-based interventions for preventing unintentional injuries.
- Data are needed for evidence-based policy-making and to improve the development of policy evaluation indicators for all relevant areas related to environment and health.
- Noise maps under the responsibility of the Malta Environment & Planning Authority should be prepared as soon as possible; this will facilitate the drafting of the relevant policies on residential noise by the health sector.
- The Malta Environment & Planning Authority should implement an automatic system to inform the health sector of any exceeded environmental parameters (air quality, etc.).
- A comprehensive health report mapping the health situation and trends of Malta's population would be of value.
- Developing a geographical information system to reach a lower level of aggregation would be advisable to better associate health data with data on environmental exposure.
- Efforts should be stepped up to set up a population-wide injury surveillance system.
- Data reporting to WHO should be centralized through one unit as far as possible, as the many different requests from different units within WHO increase the burden of work on the small team.
- The reporting template WHO developed for implementing the International Health Regulations needs to be updated, as it leaves too much room for interpretation and is not sufficiently clear.
- A database collecting information on the inspections performed on ships would be a useful tool.
- Anthropometric measures among adults would be good approach to monitor the obesity and overweight situation of the population.
- Having a designated institution progressively adopt indicator-based analysis and reporting following the ENHIS methods would be useful.
- Data collection on the occupational causes of morbidity and mortality can be improved.
- Further analysis is required in noise exposure due to air traffic. The noise maps to be prepared by the Malta Environment & Planning Authority could include this.
- Support is needed from the government to sustain and enhance the collection of climate data and to disseminate timely information and alerts issued by the Meteorological Office to all relevant authorities.
- It is suggested that both water suppliers and public health authorities make data on water quality available.
- Better management and quality assurance of data are required.
- Public perception in case of problems with bathing water and drinking-water quality is still a problem and needs to be addressed further.
- Relevant data on environment and health should be collected in one place and by one institution so that they are easily accessible.
- Data on health and environment should be easily available to the public and to physicians, for example, by using electronic media in accordance with the Aarhus

Convention (Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters).

- Labour inspectors should get training or have background formation in toxicology.
- Training in environment and health for family doctors and general practitioners should be ensured from official sources and not only from NGOs.
- General practitioners may be made more alert to problems involving infectious diseases and outbreaks through better sensitization and information.
- Training on health impact assessment needs to be improved at the university and professional levels.
- Research on environment and health should be improved and research positions in this field created at the national level.
- A national biomonitoring programme needs to be initiated.

## **Conclusions and recommendations**

### Conclusions

- The report shows that urban outdoor air pollution, lack of physical activity and nitrate concentrations in groundwater are the main health and environment concerns in Malta.
- Road traffic is of high national concern, contributing not only to air and noise pollution but also promoting road crashes and insufficient physical activity.
- The environment and health situation has improved overall in recent years, and many policies and priority measures have been adopted.
- Children and adolescents are recognized as a priority in environmental and occupational health.
- Despite increasing recognition of disease prevention, the health sector is still giving higher priority to curative health care.
- Environment and health still remains a niche in the political decision-making processes.
- The Department for Environmental Health (Public Health Regulation Division) within the Ministry for Social Policy, Health, the Elderly and Community Care is the main institution responsible for environment and health in Malta.
- The health sector is giving higher priority to noncommunicable diseases.
- Many sectors, bodies and institutions cover environmental protection and management, the main institution being the Malta Environment & Planning Authority.
- Other sectors have taken many disease prevention activities on board: for example, the education sector is strongly emphasizing healthy nutrition, preventing injuries and, more recently, also physical activity.
- The Public Health Act only acknowledges environment and health to a limited extent, mainly focusing on infectious diseases.
- The main policy instrument for environment and health is the NEHAP.
- Malta has made significant progress in developing an intersectoral approach in environment and health policy-making.
- Health needs to be better integrated into environmental impact assessment procedures.
- Knowledge on environment and health and the availability of human resources in environment and health need to be improved.

### Recommendations

- The ongoing reform of the public transport system would be of further benefit by more strongly emphasizing healthy alternatives.
- A balance needs to be found between implementing the EU agenda and ensuring a focus on specific national priorities.

- More financial support for disease prevention and health promotion services is desirable.
- The Department for Environmental Health needs more human resources.
- The health sector should optimally always participate in environmental impact assessment.
- Physicians should be more strongly involved in promoting disease prevention action.
- The national capacity to apply for EU funds needs to be improved.
- More streamlined collaboration between the environment and the transport sectors is recommended.
- The participation of NGOs in the decision-making process could be institutionalized further.
- Environment and health could be better addressed at the policy level.
- Policy documents should ideally be equipped with the right implementation structure.
- A comprehensive health report mapping the health situation of Malta's population would be of great value.
- Progressive adoption by a designated institution of indicator-based analysis and reporting following the ENHIS methods is highly recommended.
- All data relevant to environment and health should be collected in one place.
- Research in environment and health requires better allocation of resources, including funding.

## D. Poland

### 1. Key national health characteristics

- Life expectancy at birth (2005): 71 years for men; 79 years for women.
- Major causes of death (2004): cardiovascular diseases (46% of all deaths); cancer (25%); external causes (7%); respiratory diseases (5%); and diseases of the digestive system (4%).
- WHO estimate of the burden of disease from environmental risk factors (2004): 17%.

### 2. Key effects on children

- Road crashes among young people (0–24 years): 9.28 deaths per 100 000 population – above the average for the European Region. Road traffic injuries contribute significantly to the overall burden of mortality among people younger than 25 years in Poland.
- Mortality from other accidents (drowning and submersion, poisoning, falls and exposure to smoke, fire and flames) among children (1–19 years old) is 3.38 per 100 000 population, slightly above the median for countries in the WHO European Region.
- Postneonatal deaths from respiratory diseases: 0.20 per 1000 live births.
- Most common chronic diseases in children: asthma and allergies. The prevalence of asthma (10%) is relatively low among children aged 13–14 years. The rates of allergic rhinoconjunctivitis symptoms among children 6–7 and 13–14 years old are high and rising.

### 3. Environment and health priorities

- Water and sanitation  
A total of 85% of the population is connected to a public water supply; 58% of the population is connected to wastewater treatment facilities but only 14% to sanitation facilities in the home in rural areas. Compliance with mandatory requirements for water quality was fulfilled in only 12% of bathing areas in freshwater zones and 35% of bathing areas in coastal zones.
- Environmental tobacco smoke and particulate matter (PM<sub>10</sub>)  
About 88% of children 13–15 years old are exposed to environmental tobacco smoke at home, and 90% outside the home. The mean concentration of PM<sub>10</sub> calculated for cities in Poland is 30.6 µg/m<sup>3</sup>.
- Road traffic injuries and unintentional injuries among children  
The mortality rate due to road traffic injuries among people aged 0–24 years is 9.28 per 100 000 population, and the mortality rate due to unintentional injuries among children 1–19 years old is 3.38 per 100 000 population.

## Further comments and recommendations

- There is little awareness of health risks deriving from climate change, both in civil society and government institutions.
- Children are recognized as a key priority of the public health system.
- Preventing environment and health risks is often not explicitly considered a public health priority.
- The objectives of the National Health Programme reflect socioeconomic inequality, but the priorities set by environment and health activities and programmes do not often explicitly reflect this.
- The role of the built environment needs to be seen from an integrated health-centred perspective.
- Actions and programmes are fragmented among stakeholders, resulting in lower efficiency.
- Priority-setting in environment and health should be supported by the use of standardized tools. ENHIS is a recommendable tool to be implemented at both the national and subnational levels.
- Policy measures on preventing exposure to harmful environmental risk factors have to be strengthened both by action to reduce the level of pollutants and risk factors and behavioural changes within the population.
- The identification of environment and health priorities should be strengthened at the national and subnational levels.
- Efforts should be directed towards identifying all data sources according to the methods underlying ENHIS.

## 4. Institutional set-up

Poland is the largest country in central and eastern Europe in both population (38.1 million) and area (312 685 km<sup>2</sup>). Poland entered the EU in May 2004. It is a social democracy, with a president as the head of state. The government structure centres on the Council of Ministers, led by a prime minister.

The main health institutions in Poland responsible for health risks related to environmental factors are as follows.

- Department of Public Health of the Ministry of Health  
Within the Ministry of Health, the Department of Public Health covers disease prevention activities related to environment and health. In relation to the priorities set by the WHO regional priority goals for the Children's Environment and Health Action Plan for Europe, the most noteworthy activities are in physical activity and nutrition, road safety, anti-tobacco campaigns and respiratory diseases (asthma). Disease prevention activities mainly focus on children's health and are often implemented in cooperation with other institutions. The Department of Public Health is mainly responsible for drafting legislation and policy-making, while the Chief Sanitary Inspectorate is responsible for implementing disease prevention activities.
- Chief Sanitary Inspectorate with its Department of Environmental Hygiene  
The Inspectorate performs sanitary controls and is organized into departments: Environmental Hygiene; Communicable Disease Control; Public Health and Health Promotion; and Nutrition and Food Safety. The Inspectorate has laboratories that perform analysis in the following areas: municipal hygiene; food, nutrition and consumer articles; epidemiology; occupational hygiene; and radiation protection. It

informs the population about the quality of the environment, organizes and carries out educational activity aimed at health promotion and develops desirable attitudes and behaviour concerning health.

- National Institute of Public Health – National Institute of Hygiene (NIPH-NIH)  
The NIPH-NIH is an applied research institution implementing a wide range of activities concerning public health, including especially evaluating population health (routinely collected health indicators). The NIPH-NIH has also a policy advisory function in the process of preparing laws. It assesses threats to health arising from the exposure to harmful biological, chemical and physical agents in food, drinking-water and indoor and outdoor air. The NIPH-NIH provides health risk assessment and management expertise and elaborates preventive environmental measures.
- Nofer Institute of Occupational Medicine  
The Nofer Institute is one of the leading centres in occupational medicine. It is a WHO Collaborating Centre for Occupational Health and WHO Collaborating Centre for Environmental Health. Its activities focus on scientific research and education as well as international cooperation in occupational medicine, environmental medicine, public health and epidemiology. It assesses exposure to and treatment of harmful chemical, physical, psychosomatic and biological agents in the working environment.
- Institute of Occupational Medicine and Environmental Health  
The Institute focuses on research and is in charge of health promotion at the workplace through educational activities and for treating diseases caused by exposure to biological, chemical and physical factors. The Institute also analyses environment and health hazards, focusing on indoor air quality, noise levels, electromagnetic fields and ionizing radiation. It is involved in health impact assessment of industrial plants, sewage-treatment plants, highways and landfill sites.

In addition, several institutions are involved in environmental policy:

- Ministry of Environment and Chief Environmental Inspectorate
- Institute for Ecology of Industrial Areas
- Institute of Environmental Protection.

Other relevant sectors involved in environment and health policy-making include:

- building and infrastructure
- transport
- labour
- education
- local government
- NGOs.

Poland has many NGOs, but none focuses directly on environment and health. Nationally, the role of NGOs is mostly seen in raising awareness rather than influencing regulations.

Further comments and recommendations

- Different levels of administration create difficulty in developing and implementing adequate environment and health activities.

- At the government level, the environment as an explicit determinant of public health is covered through the Department of Environmental Hygiene of the Chief Sanitary Inspectorate. Nevertheless, several governments, quasi-governmental and research-oriented institutions are responsible for managing environment and health risk factors, actions and programmes.
- Environment and health is tackled predominantly from a research perspective. The policy advisory function of the institutions involved in environment and health is not very clearly defined.
- Environment and health is predominantly covered through an occupational health approach.
- Many different institutions tackle different aspects of environment and health and do not seem to coordinate sufficiently.
- Many institutions dealing with environment and health issues do not seem to be involved in the work of the public health institutions.
- Local governments are given the responsibility to implement environment and health measures, but insufficient resources (capacity and expertise as well as financial resources) are allocated to them.
- No NGOs focus on environment and health; single NGOs tackle environment and health relevant issues individually.
- The role of physicians in the environment and health process is not well defined; they are mainly seen as the interface with civil society but have no specific involvement in or awareness of environment and health.
- There is considerable high-quality expertise in environment and health, and it effectively contributes to implementing European programmes and projects. However, the expertise is not sufficiently used in national programmes. The collaboration and transfer of the good practice within the country is rather limited.
- Physicians should be more actively involved in preventive action – better information generated by government authorities dealing with environment and health and direct collaboration with medical societies would help in this task.
- Improved and stable employment opportunities should be created for environment and health professionals.
- Environment and health NGOs representing public and professional interests in environment and health policy- and decision-making should be strengthened.
- Efficiently allocating the available financial resources requires coordinating the responsibilities among all the institutions involved.
- Setting up an operational mechanism integrating the existing health and environment information and ensuring the involvement of different stakeholders dealing with public health and environmental monitoring will facilitate sharing information and experience, using the national expertise and evaluating ongoing programmes and projects. For the integrated information mechanism, an infrastructure of distributed data systems and a network of institutions with mandates for environmental and health monitoring and assessment should be established.

## 5. *Legal framework and tools*

- Environment and health policy in Poland is implemented under the umbrella of several national acts and policy programmes. The new Constitution obligates public authorities to combat epidemic diseases and to prevent negative health effects from environmental degradation. The same article emphasizes the right to health protection, access to equal health care services and the relevance of giving special health care to children, pregnant women, disabled people and older people. The new Constitution also stresses the need to protect the natural environment and to ensure sustainable development (Article 5), requires public policies ensuring ecological security and provides the right for all citizens to be informed about the quality of the environment and its protection (Article 74).
- Poland has no public health act that could be considered a legally binding document controlling the effect of the environment on health. The legal capacity to tackle environment and health is legally ensured through specific legislation at the government level and controlled and enforced at the municipal level.
- Environmental legislation and regulations cover environment and health, and there are three major acts:
  - Environmental Protection Act;
  - Act on Access to Information on the Environment and its Protection and on Environmental Impact Assessments; and
  - the National Environmental Policy Programme 2007–2015 – an implementation component of the Environmental Protection Act.
- The key national policy for settings the priorities and the agenda for public health in Poland is the National Health Programme. The current Programme for 2007–2015 is based on the previous National Health Programme in force between 1996 and 2005 and is shaped in accordance with the Health for All policy framework for the WHO European Region. The general principles are reducing territorial and social inequality in health and activating local governments and NGOs for health promotion. Children are the main target group of the Programme. The targets set are that premature births will drop from 6.4% to 5.5% and that infant mortality will decrease to 4 per 1000 live births by 2015.
- In 1997–1999, the National Environment and Health Action Plan (NEHAP) for Poland was developed as a joint action of the Ministry of Health and the Ministry of Environment. The Institute of Occupational Medicine and Environmental Health, the Institute of Occupational and Radiological Health and the Institute for Ecology of Industrial Areas under the Ministry of Health revised and updated the NEHAP in 2000. The major areas of the NEHAP for 2000–2005 were:
  - improving the development and implementation of the state policy on environment and health;
  - improving the planning and management of environment and health;
  - preventing and improving actions aiming at reducing specific environmental risks;
  - involving the economic sector in prevention activities;
  - improving international cooperation;
  - implementing environment and health action plans; and
  - monitoring the efficiency of environment and health activities.
- The main instrument relevant to environment and health is the Long-Term Governmental Programme “Environment and Health”. The Programme sets the most urgent priority tasks for environment and health and is the implementation programme



of the NEHAP. The Programme was the first programme jointly developed and implemented by the Minister of Health and the Minister of Environment in Poland, with the participation of the Ministry of Education and Science (succeeded by the current Ministry of National Education and the Ministry of Science and Higher Education).

Transport policies (such as the National Road Safety Programme) and economics and funding policies are also relevant.

#### Further comments and recommendations

- The authority to tackle environment and health is legally ensured only at the municipal level.
- The environment policy programme tackles the relationship between environment and health. Nevertheless, there is no link to the National Health Programme.
- The existing health prevention and promotion programmes focus mainly on behavioural changes, such as the National Road Safety Programme.
- The National Health Programme acknowledges the role of NGOs in public health.
- The NEHAP has enabled synergies to be established in environment and health activities and defines clearly the roles and responsibilities of the actors involved.
- As a government act, all ministries have approved the NEHAP. In practical terms, not all relevant sectors are represented.
- Policy actions in environment and health are not regularly funded. Only the NEHAP and the National Road Safety Programme have had clear sources of funding. When the government adopts an environment and health programme, it does not automatically allocate a budget.
- Structural funds from the EU are mainly allocated to the built environment sector.
- Financial support for public awareness is not foreseen.
- Economic arguments and health costs are not used for setting priorities or for informing or convincing policy-makers to take preventive measures.
- Economics at the personal level is used as an argument, whereas the public health economic arguments are not.
- Health cost arguments are not used in setting local priorities.
- There is no comprehensive policy related to transport emissions.
- A more concrete programme on health and environment should be prepared as an integral part of the new National Health Programme.
- Active involvement in the relevant international conventions is recommended.
- Clear synergies need to be established between the environment and health policy programmes.
- Funding mechanisms and institutionalized mechanisms for supporting partnerships in public health should be created.
- A national children's environment and health action plan, with its regional priority goals, is a tool to support and help guide national processes. It should be prepared as an integral part of the National Health Programme.
- Institutional and human resources should be allocated to implementing Poland's NEHAP and children's environment and health action plan, both in the relevant sectors and institutions and to ensure coordination in the health sector.
- Extend the use of economic instruments, for example, to encourage enterprises to observe health and safety standards and to report all occupational disease.
- Make more systematic use of integrated economic analysis (such as cost-benefit analysis) in environment and health policy-making.
- Review existing environmentally related taxes from the perspective of health expenses.

- The protection of public health should figure more prominently in legislation related to both the environment and economic development.

## 6. *Intersectoral collaboration*

- Collaboration between sectors is an essential prerequisite for protecting health. At the national level, intersectoral collaboration is formally institutionalized through several legislative and consultation processes. The Long-Term Governmental Programme “Environment and Health”, as the implementation programme of the NEHAP, was the first intersectoral programme on environment and health jointly developed and implemented by different ministries. The Programme had its own budget and implementation plan co-funded by the Ministry of Health, the Ministry of Environment and the Ministry of Education and Science. There is strong cooperation with the private sector.
- Intersectoral collaboration in Poland differs greatly at different operational levels and functions better at the local level and between research institutes and with private partners. Specific areas such as physical activity, nutrition and road safety also seem to benefit from better collaboration between sectors than other areas.
- The need for strengthening the collaboration between sectors is increasingly being recognized in Poland. Efforts are currently being made to create an environmental protection agency with the aim of coordinating all activities within environment management. In addition, national plans are underway to better consolidate and integrate the work of the veterinary, environmental and health inspectorates.

Further comments and recommendations

- Actions and priorities are highly fragmented.
- At the local level, establishing a master plan entails collaboration between all sectors.
- Intersectoral collaboration in the area of transport (the National Road Safety Programme and NGOs) is well developed.
- International cooperation on environment and health needs to be strengthened.
- Clear responsibilities have to be defined for each sector involved as well as funding schemes attached to the activities.
- Dialogue between sectors at the regional level should be strengthened.

## 7. *Tools for action*

Monitoring

- Environmental quality can be monitored to indicate the level of compliance with a standard but also to assess trends over time. Although EU legislation requires advanced monitoring and reporting on environmental hazards, there is no national requirement on monitoring and reporting on environment and health indicators and no regulation on its establishment.
- Many institutions and sectors monitor environmental hazards to health in Poland, resulting in a scattered monitoring approach and in duplicate efforts in some areas. Monitoring is mainly performed by the national and respective local, sanitary and environmental inspectorates, but also by the NIPH-NIH and specialized institutes or agencies.
- Water and sanitation: the Chief Sanitary Inspectorate monitors drinking-water and bathing water following the requirements established by EU directives.

- Injuries: a central registry for children's accidents seems to be lacking, and the various services seem to have little or no coordination.
- Air quality: both the Chief Environmental Inspectorate and Chief Sanitary Inspectorate carry out monitoring at 550 stations at the national level (excluding passive measurement stations). The Chief Environmental Inspectorate collects the data, and the Chief Sanitary Inspectorate analyses them.
- Chemical and biological risks: in food contamination, the NIPH-NIH assesses microbiological risk (such as *Salmonella*). The health sector is responsible for all processed food products. The NIPH-NIH has its own laboratories for food safety assessment. It also performs human biomonitoring of persistent organic pollutants in blood, milk and semen and virological assessments of food products. The Institute of Food and Nutrition is the national reference laboratory for food quality (macro- and micronutrients) and safety. The General Veterinary Inspectorate under the Ministry of Agriculture and Rural Development is responsible for all products of animal origin. It cooperates with the National Veterinary Institute.

#### Environmental impact assessment and health impact assessment

- Environmental impact assessment was introduced in Poland through the Environmental Protection Act.
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- Environmental impact assessment is mandatory for: (1) the draft concept of the national land-use policy, draft land-use plans and draft regional development strategies; and (2) draft policies, strategies, plans or programmes in industry, energy, transport, telecommunication, water management, waste management, forestry, agriculture, fisheries, tourism and land use, where their preparation by the national or voivodship public administration authorities is provided for by law.
- The extended responsibility of including health in environmental impact assessment is not sufficiently covered in the enforcement of the law. There is not enough expertise to implement the legislative regulations reliably and efficiently based on recognized methods of health risk assessment or health impact assessment. The health sector reviews the health part of environmental impact assessment more according to good practice standards.
- Other tools detailed in the report are capacity-building and communication.

#### Further comments and recommendations

- Many agencies and institutions perform public health monitoring at different levels (national, municipal, etc.).
- Monitoring concerns either health or environment; there is a lack of integrated health and environment information.
- Chemicals seem to be the risk factors mostly monitored. Many different institutions are involved in this.
- There is no reliable countrywide surveillance of injuries and other environmentally related diseases.
- There is considerable information but not a uniform approach to preparing, analysing and reporting it to support health and environment policy action.
- There is little data-sharing between the institutions or sectors.
- Reports from one sector are not always made available to other sectors.
- The health sector seems to inadequately cover health impact assessment.
- The existing procedures for health impact assessment do not seem to be well developed.

- Environment and health and disease prevention in the current medical curriculum are scattered and not taught uniformly.
- There are not enough experts with strong environment and health knowledge.
- There is no specialized or supplementary training for paediatricians in environment and health issues.
- In both secondary and primary schools, environment is dealt with as an intersectoral subject, and the health effects of environmental factors (both positive and negative) are not explicitly emphasized.
- There is little awareness of environmental risk factors in society (such as environmental tobacco smoke and noise).
- Existing information is not systematically communicated to the public.
- The Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters stipulates that all data on environmental conditions be accessible, but access to data is not always ensured.
- The mass media seem to focus more on specific fields: nutrition and physical activity.
- Tools for integrating health and environment data should be improved.
- The surveillance for injuries, water and foodborne diseases needs to be strengthened.
- The further development and implementation of ENHIS needs to be given higher priority, building on the work already done, and further expanding current work on environmental health impact assessment.
- A uniform approach to preparing, analysing and reporting information needs to be developed to facilitate its sharing and use in environment and health.
- A statutory framework should be developed for including ENHIS and health impact assessment in planning, monitoring and evaluating environment and health policy and action programmes.
- The responsibilities need to be clarified in health impact assessment, environmental impact assessment and environmental health impact assessment. The methods of health impact assessment and environmental impact assessment need to be developed further.
- A national accreditation system for experts in environmental health impact assessment should be established.
- Continued efforts are needed in capacity-building, follow-up of the training, establishment of annual programmes for knowledge dissemination and updating and developing needed skills in environmental impact assessment and health impact assessment.
- An institutional entity should be designated as a formal body to coordinate the implementation of environmental health impact assessment in Poland.
- Country capacity in using ENHIS and environmental health impact assessment as standard public health tools should be strengthened further.
- Environment and health education should be strengthened in the university curricula.
- Intensify the training of environmental health specialists, including international training for a limited number of specialists and participation in international technical cooperation projects.
- Country capacity in using ENHIS and environmental health impact assessment as standard public health tools should be strengthened further.
- Provide more public information about the right to health information, environmental information and the burden of health attributable to environment.
- Encourage public participation in decision-making.
- Other sectors should also support and fund structures for communication concerning the status of environmental risk factors.
- Public information and awareness-raising should be promoted.

- The Ministry of Health should increase the resources available for assessing and investigating health effects and for developing a communication structure for feedback to the reporting regions and districts.
- The role of the mass media in communicating to the public about the health risks deriving from the environment should be strengthened.

## **Conclusions and recommendations**

### Main conclusions

- The quality of the environment has improved.
- The use of data is not sufficiently organized and institutionalized.
- Two parallel systems deal with environment and health: the environment and sanitary inspectorates.
- Intersectoral collaboration functions better at the level of institutes and at the local level and with the private sector than at the government level.
- The responsibilities need to be clarified in health impact assessment, environmental impact assessment and environmental health impact assessment.
- Children are well recognized as special target groups of policies and programmes. Prevention is well focused on children.
- Capacity-building, training in environment and health and environment and health in the medical curriculum are not sufficiently developed.
- Environment and health is tackled predominantly from a research perspective, but the translation of the research results into the policy advisory function for the institutions is not clearly defined.
- Many prevention activities focus on behaviour and less on structural elements.
- Related ministries (such as the Ministry of Finance) do not provide any financial contributions.
- Economic arguments and health costs are not used for setting priorities or for informing or convincing policy-makers to take preventive measures.

### Recommendations

- Research results need to be better translated into policy decisions.
- Basic and supplementary training on environment and health for general practitioners and paediatricians needs to be further institutionalized.
- A more concrete programme on health and environment should be prepared as an integral part of the new National Health Programme. Clear synergies need to be established between the environment and health policy programmes.
- Integrated economic analysis (such as cost-benefit analysis) should be used more systematically in environment and health policy-making.
- A statutory framework should be developed for including the European Environment and Health Information System (ENHIS) and health impact assessment in planning, monitoring and evaluating environment and health policy and action programmes.
- An institutional entity should be designated as a formal body to coordinate the implementation of environmental health impact assessment in Poland.

## Summary information on the regional priority goals in the report

### Regional priority goal 1: Water and sanitation

- Water and sanitation are main environment and health issues in Poland. Significant progress has been made in providing the population in rural areas with an improved water supply in homes and in connecting households to the public water supply. However, only 58% of the population is connected to wastewater-treatment facilities and only 14% of the population is connected to sanitation facilities in the home in rural areas.
- Only 12% of the bathing areas in freshwater zones and 35% of the bathing areas in coastal zones complied with the mandatory requirements for water quality. In 2005, Poland had one of the lowest compliance rates in the framework of the EU bathing water quality directive in terms of compliance with standards and insufficient sampling.
- Many institutions conduct surveillance as an essential tool in controlling waterborne diseases, depending on the type of water and the parameters analysed. The procedures need to be harmonized and access to data centralized.
- Water contamination occurs more often in small water supplies and more rarely in medium-sized ones. About 10% of the samples taken did not comply with the standards. The non-compliance mainly referred to the concentrations of iron and manganese and to turbidity, less often to the concentration of ammonia and to other water parameters analysed in 2%.
- One of the major problems is increasing water prices.

### Regional priority goal 2a: Injury prevention

- In Poland, the mortality rates due to road traffic injuries among people aged 0–24 years and the mortality rates due to unintentional injuries among those 1–19 years old are only slightly above the WHO European Region average but still unacceptably high. Poland is within the range of countries with moderate to low commitment in implementing policies to prevent injury. The risk of children's injuries seems to be a concern specifically in rural areas.
- The Ministry of Infrastructure has the main responsibility for preventing road traffic injuries, but efforts have been made to involve other sectors. The National Road Safety Programme follows a multisectoral approach. Despite the institutionalized setting, however, not all sectors have been equally involved in the process. The Ministry of National Education, originally part of the National Road Safety Council, has dropped out from the process mainly due to financial constraints.
- Cooperation with the private sector and with NGOs seems to be effective.
- Although efforts have been made to prevent unintentional injuries, there is no reliable registry for children's accidents. Many institutions are involved in collecting data, but they all use different methods.
- Beside information and prevention campaigns, safety needs to be improved from an urban planning perspective (such as constructing safe bike lanes).

### Regional priority goal 2b: Physical activity

- Poland ranges in the average of countries in the percentage of 11-year-old boys who were physically active at the level recommended by the guidelines on moderate-to-vigorous physical activity. Further, the prevalence of excess body weight (including obesity) among 13-year-old boys in Poland is lower than the average in the European

Region. Policies to reduce and prevent excess body weight and obesity among children and adolescents have steadily improved.

- Although efforts are being made to increase the level of physical activity, particularly in schools, nutritional policies have not yet been applied to schools. The sale of food and drinks in schools is still not controlled, and all children do not have the explicit right of access to safe playgrounds and sporting facilities for children after school.

#### Regional priority goal 3: Air quality

- Air pollution and exposure to environmental tobacco smoke are major environment and health issues in Poland. Respiratory diseases are the fourth leading cause of death and particularly affect children. Environmental tobacco smoke is by far the most significant indoor air quality issue in health terms, and Poland is strengthening its policies to reduce children's exposure.
- The mean concentration of PM<sub>10</sub> calculated for cities in Poland is relatively high among the countries of the European Region for which data are available. Overall, transport is one of the major problems at the urban level resulting in high air pollution.
- Many efforts have been made to reduce environmental tobacco smoke by introducing smoking bans. Nevertheless, smoking at home is still a major concern. Despite many prevention campaigns, the priority recently seems to be treating tobacco-dependent people.
- Air quality has improved steadily through the closure of many industrial plants, improving the quality of the environment in the past 15 years.
- There are considerable air quality data, but they are not used effectively for assessing population exposure and the related health effects.

#### Regional priority goal 4: Chemical (including food safety), biological and physical risk factors

- Other environmental hazards to public health include chemicals, especially in food and working environments, and noise exposure. The review generally shows that environment and health is predominantly covered through an occupational health approach.
- Children's exposure to lead in Poland has been of concern, especially in some regions like Silesia. The blood lead concentration in children has decreased with the introduction of unleaded fuels, but local industrial plants continue to be a risk factor.
- Analysis of the policy response to food safety and chemicals shows a large variety of data collected under the responsibility of multiple sectors.

## E. Serbia

### 1. Key national health characteristics

- Life expectancy at birth (2001–2003): 70 years for men; 76 years for women.
- Infant mortality (2007): 6.7 deaths per 1000 live births.
- Major causes of death (2006): cardiovascular diseases and cancer (70% of all deaths), ill-defined conditions, respiratory disease and injuries. Cervical cancer, breast cancer and lung cancer are particularly problematic. The incidence of cancer of the cervix in Serbia is the highest in the WHO European Region. About 35% of all deaths are related to smoking.
- The WHO estimate of the environmental burden of disease for Serbia and Montenegro (2004): 27%.
- The population of Serbia has experienced a demographic contraction, with negative population growth since 1990. The country's population, including refugees, is characterized by ageing, smaller families and declining numbers in rural and remote areas of the country, with 16% of the population older than 65 years of age.

### 2. Key effects on children

- In the city of Belgrade (2000), many non-fatal injuries in children (0–19 years old) happened at home (32%), during sport and recreational activities (18%), in school and kindergartens (17%) and in road crashes (7%). The most common causes of injuries were falls (slipping in 42% and falls from a height in 8%), and other accidents 41% (including intentional injuries, explosions, strangulation, etc.).
- Schoolchildren appear to be particularly at risk from problems associated with water and sanitation. For example, 90 schools in the Autonomous Province of Vojvodina have no water-supply facilities, and the water quality had satisfactory bacteriological quality in 508 schools. In Belgrade, monitoring of water quality in schools located in city suburbs, which have their own water supply systems, showed that 58% and 63% of samples did not meet physical and chemical requirements and biological requirements respectively.
- Three quarters of children 13–15 years old are exposed to environmental tobacco smoke at home.

### 3. Identified environment and health priorities

- Water and sanitation  
Access to safe drinking-water is a key priority, as the supply network needs to be upgraded and repaired. In rural areas, 36% of the population does not have access to improved water supply. Although a large percentage of the population is supplied with drinking-water by piped distribution, many systems do not function properly, resulting in substantial losses of water in the distribution networks. Deterioration of the water-supply infrastructure, including the disinfection systems (chlorination), has contributed to a decline in the quality of piped drinking-water.

Lack of access to sanitation is an area of concern. Rural areas in particular have a low percentage of acceptable sanitation, and Serbia as a whole has very few operational sewage-treatment facilities.



Significant health risks, such as diarrhoeal diseases (chronic and infectious), are related to water and sanitation in Serbia. Low quality of surface water poses threats to human health when used for recreational purposes, especially blue-green algae present in eutrophic waters. Danubian endemic familial nephropathy occurs in some areas of Serbia, hypothesized to be linked to drinking-water quality.

Water quality differs significantly from region to region. Monitoring has shown the presence, in different areas, of ammonia, nitrates, sulfides, iron, mineral oils, evaporable phenols and manganese and, in some cases, suspended solids and arsenic. Throughout Serbia, the main problems with physicochemical water quality parameters are turbidity, iron, manganese, nitrates and heavy metals, including arsenic. In central Serbia, the main problem is bacteriological contamination, with more than 40% of samples not meeting standards. About 90% of the private drinking-water supplies do not meet bacteriological standards. Schoolchildren may be particularly at risk.

The sewerage system covers about 48% of the country's population. A total of 75% of the total urban population is connected to public sewerage systems, but only 16% of the rural population is connected to sanitation facilities. Thirteen per cent of all municipal wastewater is estimated to be treated. Only 28 towns in Serbia have a wastewater-treatment plant.

Large areas of Serbia are subject to flood damage, especially in the Autonomous Province of Vojvodina and eastern Belgrade. Countrywide, it is estimated that 500 large communities, 515 industrial facilities, 680 km of railroads, 4000 km of roads and about 30% of agricultural land are vulnerable.

- Unintentional injuries

Unintentional injuries are a leading cause of morbidity and mortality among children and adolescents in the WHO European Region, and Serbia is among the countries that need a stronger commitment to preventing injuries. The Health Statistical Yearbook of Serbia 2007 identifies the two primary causes of death, one of which is identified as "accident or violence that caused lethal injuries" and gives the mortality rate for injuries and poisoning as 52.4 per 100 000 population in 2007.

The standardized death rate (SDR) for external causes of injury and poisoning, all ages, has almost consistently been decreasing in Serbia since 1998. The rate was 49.5 per 100 000 population in 2000 and had fallen to 44.8 per 100 000 population by 2006, much lower than the average rate for the WHO European Region of 71.9 per 100 000 population. In contrast, the SDR for road crashes has been steadily increasing since 2003 to 8.2 per 100 000 population in 2007, although this is still lower than the average for the European Region of 11.0 per 100 000 population in 2006. A total of 889 people died from road crashes in Serbia in 2006, up from 621 in 2002.

In the city of Belgrade (2000), many non-fatal injuries in children (0–19 years old) happened at home (32%), during sport and recreational activities (18%), in schools and kindergartens (17%) and in road crashes (7%). The most common causes of injuries were falls (slipping in 42% and falls from a height in 8%), other accidents 41% (including intentional injuries, explosions, strangulation, etc.) and burns and poisoning 8%.

The Institute of Public Health of Serbia only registers and publishes broad groups of diseases from the 10th revision of the International Classification of Diseases for children 0–7 years old and 7–18 years old. The rates for injury, poisoning and certain other consequences of external causes (S00–T98) rose between 1997 and 2004 in both age groups (0–7 years: from 45 to 68 per 1000 children, 7–18 years: from 38 to 71 per 1000 children).

- Air pollution

The quality of ambient air in several areas and towns in Serbia is poor due to emissions of sulfur dioxide, nitrogen oxides, carbon monoxide, soot and particulate matter. The air quality deteriorates particularly during calm weather conditions and during the heating season. Poor urban quality air is due mostly to particulate matter emissions.

The mean concentration of PM<sub>10</sub> in four cities in Serbia in 2004 was about 55 µg/m<sup>3</sup>; thus, Serbia has a relatively high number of polluted cities compared with other countries in the European Region (for which data are available).

Air pollution results mainly from the combustion of low-quality lignite and vehicle emissions. The lignite has low calorific value and high moisture content, and combustion produces high quantities of fly ash, sulfur oxides and nitrogen oxides. Emissions from motor-vehicle exhaust contribute to pollution with sulfur dioxide, carbon monoxide, nitrogen oxides, ozone, particulate matter and lead. The main reasons for the air pollution from the transport sector are the poor quality of engine fuel (leaded petrol), obsolete vehicles and generally poor technical standards of the vehicle fleet. Leaded petrol is still used in Serbia, although the use of unleaded fuel is increasing. Motor-vehicle use continues to increase, and air pollution from transport has therefore worsened in recent years.

One of the main causes of indoor air pollution in Serbia is environmental tobacco smoke. A 2006 survey showed that 35% of adults in Serbia smoked (40% of men and 30% of women). Among people 15–19 years old, 71% are exposed to environmental tobacco smoke in their homes. Three quarters of children 13–15 years old are exposed to environmental tobacco smoke at home.

Indoor air quality is solely regulated for working environments. Indoor temperature, relative humidity, air circulation, light intensity and noise are regularly measured, analysed and reported in all child-care centres and schools. This monitoring is mandatory.

- Hazardous chemicals, physical and biological agents and hazardous working environments

Although lead emissions are particularly dangerous and can lead to mental developmental problems in children, few studies in Serbia have focused on the health effects of lead in children. The phasing out of leaded petrol in Serbia is being delayed due to the continuing production of old types of cars that use leaded petrol.

The general state of waste management in Serbia is inadequate and poses public health and environmental hazards. The most acute problem is hazardous waste, which is not separately collected and dumped without processing in regular waste-disposal sites. The disposal sites generally do not meet the technical requirements

of sanitary landfills. There are also hundreds of illegal dumpsites of varying size in rural areas. Dumpsites are subject to uncontrolled burning, producing harmful emissions of particulate matter, dioxins and polycyclic aromatic hydrocarbons. Degradation of biodegradable waste in dumpsites results in the emissions of landfill gas, containing carbon dioxide and methane, which may lead to explosions. Leakage from dumpsites poses a threat to groundwater, surface waters and soil due to the high concentrations of organic chemicals and heavy metals.

Industrial hotspots (such as Pancevo) are ongoing sources of concern from an environmental and occupational health perspective.

Serbia has about 60 fatal industrial accidents per year. The magnitude and significance of the problem of child labour is not fully recognized; according to a survey carried out in 2000, an estimated 15 000–20 000 children are involved in different forms of work.

#### Further comments and recommendations

- A proposal for phasing out leaded fuel has been developed and submitted for funding.
- Regular and efficient systems of environmental monitoring and environment and health surveillance show evident improvement.
- Movement towards a greater preventive approach to health is occurring, but the health system currently has a greater focus on curative health.
- Environment and health is viewed as an area of sanitary surveillance and inspection in relation to preventing communicable diseases and not dealt with in its full and broader scope.
- Physical activity is mainly seen as sport rather than a part of a healthy lifestyle.
- Coordination of environment and health services within and between the sectors needs to be strengthened.
- Greater political will and support are required to meet the commitments of the Children's Environment and Health Action Plan for Europe and to establish sustainable preventive activities together with effective monitoring and interventions.
- A greater focus on industrial pollution hotspots is required to effectively address public and occupational health concerns in the affected areas.
- Practical tools for environment and health information are required to collect reliable data on population exposure to major environmental stressors.
- Environmental health training modules should be incorporated into educational programmes for health care workers.
- Expansion of inspection services is required to effectively link with the preventive health services.
- The water distribution network needs to be expanded and repaired and wells improved.
- A uniform reporting system and regular statistical reports are needed on injuries among children by age, sex, cause and setting of the accidents and the number of fatal injuries.

#### *4. Institutional set-up*

The Republic of Serbia emerged from the state union of Serbia and Montenegro and retained international legal status after a majority vote for independence at a referendum in 2006. In 2004, the Government of Serbia declared that association with the EU was its main priority. In April 2008, the EU and Serbia signed the Stabilisation and Association Agreement, and in December 2009, Serbia formally applied for EU membership.

- The Ministry of Health is the leading authority responsible for health system, including the policy and administration related to the environmental determinants of health. The Ministry of Health mainly funds the network of institutes of public health for their research, monitoring and reporting activities.
- The Ministry of Health performs tasks of state administration pertaining to health systems: health care; mandatory health insurance and social insurance; training and specialization of health workers; health inspection; production and sales of drugs and medical devices; sanitary inspection; and others.
- The Ministry of Health has the following sectors.
  - The Sector for Sanitary Surveillance and Inspection is responsible for protecting the population against infectious diseases, food safety and safety items of general use during production, distribution and importation and public drinking-water supply. Inspections have been the main regulatory mechanism so far.
  - Sector for Health Care Planning and Public Health.
  - The Sector for International Cooperation plays an important role in environment and health, serving as Serbia's focal point for the Children's Environment and Health Action Plan for Europe, coordinating environment and health activities in various sectors together with following up international initiatives. It contributed to developing the national Children's Environment and Health Action Plan, collaborates with WHO and the EU and is involved in harmonizing legislation with EU directives. This sector has taken the lead of the National Committee for Environment and Children's Health, established in May 2008. The main task of this intersectoral working body was to create a children's environment and health action plan, to ensure effective communication on environment and health issues with all relevant stakeholders (raising awareness among health and environment professionals of the environment and health risks to children, as well as among children, young people, NGOs, together with policy-makers in all relevant sectors) and to perform activities to build capacity. Following review by stakeholders and a series of workshops and public debates, the Government of Serbia adopted the final Children's Environment and Health Action Plan for Serbia in 2009.
  - Sector for Organization of Health Services.
  - Sector for Financing and Insurance.
  - Sector for Pharmaceuticals.
- Other Ministry of Health institutions are the Institute of Public Health of Serbia, the Institute of Occupational and Radiological Health and the Republic Health Insurance Fund.
- The Ministry of Health has no department or unit dedicated to environment and health. Several units of the Ministry deal with the health risks of environmental factors, mainly the Sector for Planning in Health Protection and Public Health, the Sector for Sanitary Surveillance and Inspection and the Sector for International Cooperation.
- Serbia has the Institute of Public Health of Serbia and a network of 22 public health institutes at the subnational level. These institutes provide support to local and national authorities in health monitoring and carry out public health interventions but do not provide inspection services, as all inspectorates are part of the ministries. The service portfolios provided by the public health institutes differ significantly. The Institute of Public Health of Serbia has a mandate to:

- carry out health promotion, including community health, health education and health care for vulnerable groups;
- control and prevent communicable and noncommunicable diseases and improving emergency preparedness;
- monitor the influence of environmental risk factors in the population, control food and drinking-water safety, conduct sanitary surveillance and control compliance with hygienic standards;
- carry out public health microbiology and clinical microbiology; and
- collect data on health and the utilization of health services at the national level, producing health information for effective health reporting to public authorities and the public, maintaining databases on the basic resources of the health care system.

The Institute of Public Health of Serbia also coordinates the activities of the network of public health institutes.

- The Institute of Public Health of Serbia has six centres (Centre for Health Promotion, Centre for Informatics and Biostatistics, Centre for Analysis, Planning and Organization of Health Care, Centre for Prevention and Disease Control, Centre for Hygiene and Environmental Health and Centre for Microbiology) and one department (Department for Research in Public Health).
- The main activities of the Centre for Hygiene and Environmental Health include assessing the environmental risks to human health, controlling food safety, controlling drinking-water safety, carrying out sanitary surveillance and controlling hygiene with the goal of preventing and correcting environmental risk factors that might influence human health.
- The Law on Health Protection specifies the duties of the Institute of Occupational and Radiological Health. The Institute has three departments (Medical, Radiology and Dosimetry) and performs the following main activities: workplace monitoring; personal dosimetry; environmental monitoring; and monitoring the health of occupationally exposed personnel.
- The Law on Protection from Nonionizing Radiation involves three institutes in radiation protection: the Institute of Occupational and Radiological Health; Nuclear Science Institute (Vinca), licensed for radioactive waste; Ministry of Environment and Spatial Planning (chief inspectorate), which has primary responsibility.
- The Ministry of Environmental Protection and the Agency for Spatial Planning merged to form the Ministry of Environment and Spatial Planning in summer 2008. It consists of sectors for: urban planning, spatial planning and housing; construction, investment and land; planning and management; protection of nature; protection of natural resources; European integration, international cooperation and harmonization of regulations; control and surveillance. The Ministry is in charge of ambient air monitoring in a state network, with the public health institutes performing measurement.
- The Ministry of Environment and Spatial Planning does not have a special unit in charge of environment and health, and as yet there are no plans to establish an environment and health focal point. Competencies in this field are divided between sectors and departments such as those responsible for drafting legislation, waste management, chemicals management, radiation, noise, usage of groundwater, soil protection and environmental impact assessment and through the development of intersectoral approaches such as the Children's Environment and Health Action Plan.
- The Ministry of Environment and Spatial Planning has a department specifically designated for environmental impact assessment and for accrediting specialized

companies performing environmental impact assessment. The Ministry of Environment and Spatial Planning also checks the health component of environmental impact assessment.

- The Environmental Inspectorate is directly responsible to the Ministry of Environment and Spatial Planning and operates in all areas of environmental protection in Serbia, performing both monitoring and enforcement roles. The Environmental Inspectorate also includes a specific group trained to respond to emergency chemical accidents.
- The Environmental Protection Agency was established in 2003 as an administrative body within the Ministry of Environment and Spatial Planning. The Environmental Protection Agency administers: developing, harmonizing and processing the national environmental protection information system (such as monitoring the state of environmental factors and the registry of polluting enterprises); collecting and compiling environmental data, processing them and reporting on environmental performance and on the implementation of environmental protection policy; developing procedures for processing environmental data and evaluating them; maintaining data on the best available techniques and practices and how to apply them in environmental protection; and collaborating with the European Environmental Agency and the European Environment Information and Observation Network.
- The Republic Hydrometeorological Service of Serbia is a special state organization established in 1848. As such, it does not form part of a ministry and reports directly to the Prime Minister. The Service systematically monitors, analyses and forecasts the conditions and changes in weather, climate and water.
- Effective action to protect children's health from environmental threats requires firm political commitment and close collaboration between health and environment authorities and collaboration with other sectors such as interior, finance and economics, transport, energy and urban and rural planning. Other relevant ministries in Serbia are the Ministry of Interior, Ministry of Infrastructure (transport), Ministry of Youth and Sport (education), Ministry of Agriculture, Forestry and Water Management, Ministry of Mining and Energy and Ministry of Labour and Social Policy. The municipalities and provinces also have important roles to play.
- No NGOs focus specifically on environment and health in Serbia. Most NGOs focus on environmental management and protection and only occasionally relate this to health effects. Many NGOs have a good history of mobilizing public opinion but often have a short lifespan, receiving one-time peak funding for individual projects and then disappearing on completion. Public awareness of environment and health issues is usually high after accidents and after reports on environment and health are published but is often not expressed politically (in elections).

#### Further comments and recommendations

- Serbia's health system is being reformed and is in transition from a planned to a market economy.
- The Sector for International Cooperation in the Ministry of Health is playing an important role in environment and health.
- In the Ministry of Health, sanitary inspection and public health services are responsible for environment and health issues such as food safety, chemical safety, drinking-water quality, the effects of the environment on health and risk assessment.
- The National Institute of Public Health of Serbia and the district public health institutes are the main bodies in the health system responsible for assessing and monitoring health risks resulting from environmental factors. They are the backbone of the public health services in Serbia under direct supervision of the Ministry of Health and mainly funded by the Ministry for public health services.

- The Laboratory for Human Ecology and Ecotoxicology in the Belgrade Institute of Public Health measures many inorganic and organic compounds in samples of air, water, soil, sediments and biological materials.
- The current organizational structure of the Ministry of Health and the network of the institutes of public health does not recognize environment and health as a distinct field.
- The institutes of public health share competencies and resources, and the services the institutes can provide vary. Coordination between them is functioning well.
- Sufficient human resources are lacking that are trained in environment and health, and the number of specialists in environment and health is limited and insufficient. The number of trained inspectors is also insufficient.
- Occupational health services in Serbia are weak.
- Surveillance and data-sharing between various sectors on environment and health issues need to be strengthened considerably.
- Institutions and authorities dealing with environmental risk factors do not explicitly consider health effects as an argument for reducing environmental risks.
- NGOs focusing on environmental protection are contributing to raising the awareness of the public on environmental issues rather than environment and health. The focus is rarely on children's environment and health and well-being.
- A Public Health Association has been formed based on international collaboration for specific projects (such as in tobacco control).
- Serbia has three levels of public authorities: republic, provincial and local authorities. These three levels of government lack strong collaboration and coordination regarding environment and health inspection and control.
- The Government of Serbia would better develop and implement environment and health policy through a specific dedicated unit or capacity responsible for the environment and health in the Ministry of Health or the Ministry of Environment and Spatial Planning.
- The existing capacities of the national and district institutes of public health should be further utilized, upgraded and strengthened.
- Improved and stable employment opportunities for environment and health professionals should be created.
- Environment and health should be considered as a distinct discipline in the education of health and environmental professionals by including:
  - a specific module on environment and health in the education and training of the public health professionals and environmental specialists;
  - continuing professional education for environment and health professionals and adaptation of university curricula; and
  - environment and health training for doctors and nurses in primary health care to support preventive action at the individual and community levels.
- Occupational health services need to be strengthened by reviewing and discussing the technical and educational support and bolstering the core institutional capacity and human resource capability to deal with the special health needs of working populations.
- A regulatory body dedicated to radiation protection and a national registry of radiation sources should be developed.
- The organizational structure and communication mechanisms between the sanitary, environment and labour inspection services needs to be strengthened and streamlined.
- The Ministry of Environment and Spatial Planning should consider providing municipalities further financial and technical support for implementing the requirements of EU regulations at the local level.
- Environment and health NGOs representing public and professional interests in environment and health policy-making processes should be encouraged and

strengthened to support involvement in intersectoral committees dealing with environment and health issues.

## 5. *Tools for management and legal framework*

Serbia's Constitution, adopted in September 2006, states that "Everyone shall have the right to a healthy environment and the right to timely and full information about the state of the environment. Everyone, especially the Republic of Serbia and autonomous provinces, shall be accountable for the protection of the environment. Everyone shall be obliged to preserve and improve the environment."

The main development of priorities for the country are defined in the National Strategy for Sustainable Development, the Children's Environment and Health Action Plan and, at the international level, the aims set for the EU integration process, including transposing and harmonizing with EU legislation and implementing the Stabilization and Association Agreement with the EU.

### Public health laws related to environment and health

The Law on Public Health (2009) recognizes environment and health as one of the public health activity areas.

- The main laws that currently influence environment and health are: the Law on Health Care (2005); Law on Environmental Protection (2009); Children's Environment and Health Action Plan (2009); National Environmental Strategy; and Law on Pension and Disability Insurance (2009).
- The Law on Health Care covers all health risks in a general manner. Food safety is covered in a separate Law on Food Safety, which is currently being revised and will transfer responsibility to the Ministry of Agriculture, Forestry and Water Management. Articles 10, 13, 18 and 119 of the Law on Health Care specifically refer to environment and health. This Law specifies that social care for health at the Republic level also includes adopting and implementing the republic programme for protecting health from environmental pollution. It also includes systematic epidemiological and systematic environmental monitoring, systematic monitoring and testing of the effects of environment pollution on the health of people and systematic testing of the sanitary quality of foodstuffs, items of general use and drinking-water.
- The Law on Sanitary Surveillance defines sanitary inspection and surveillance of facilities (and their near surroundings) where certain actions are undertaken, such as public supply of drinking-water. Sanitary Inspection within the Ministry of Health is responsible for implementing and enforcing this Law.
- The Regulation on the Scope and Content of Health Protection of Citizens also defines procedures for conducting health protection for groups of citizens who are vulnerable to disease and procedures for health protection with regards to prevention, treatment and early detection of infectious diseases.
- Other relevant laws and regulations include: the Regulation on Direct Equipment, Facilities, Space and Measures for Prevention of Dispersal of Infectious Diseases; Law on Sanitary Regulation of Food and Objects of General Use; Regulation on Matters of General Usage; Law on Protection of the Population from Communicable Diseases; Law on Pension and Disability Insurance; and Law on Occupational Safety and Health.
- The Law on Occupational Safety and Health regulates indoor air quality in workplaces. The Regulations on Maximum Allowable Concentrations of Hazardous Gases, Vapours



and Aerosols in the Working Environment, adopted in 1991, regulate the maximum allowable concentrations in workplaces.

- In addition, the following regulations apply to occupational safety and health: the Law on Ionizing Radiation Protection and Nuclear Safety; Law on Farmlands; Law on Mining; Law on Yugoslav Army; and Law on Organic Production and Organic Products.

*Laws on the environment and other sectors* (the Parliament adopted a new set of 16 environmental laws in May 2009)

Environmental legislation in Serbia consists of a large number of laws and regulations (more than 100) on planning and construction, mining, geological survey, water, soil and forest protection, flora and fauna, national parks, fishery, hunting, waste management, safety of chemical production and trade, trade and transport of explosive and hazardous materials, protection of ionizing and nonionizing radiation, nuclear safety etc. Most of these laws are not harmonized with EU legislation and do not specifically target children. However, the new laws are expected to achieve progress in integrating children's issues in the creation of various sectoral policies. For example, the Law on Consumer Protection contains provisions specifically addressing children's health.

- The Law on Environmental Protection covers certain areas that are very relevant for environment and health, including: environmental protection of air, water, land, soil, forests, protected natural areas and national parks and protection against waste, ionizing radiation, noise and vibration; measures and conditions for environmental protection (prevention), in terms of national environmental programmes and plans; spatial planning and construction; conditions for operating facilities and installations; environmental quality standards and emission standards (ambient and emission limit values); bans and limitations; environmental management systems; standards for technologies, products, processes and services; environmental labelling; remediation measures; systems for issuing environmental permits and approvals; measures for protecting against hazardous substances (production, transport and handling); environmental monitoring (monitoring and information systems); access to information and public participation in decision-making; and liability for environmental pollution.
- In addition, the following laws on environmental protection are relevant to health: the Law on Ratification of the Kyoto Protocol of the United Nations Framework Convention on Climate Change; Law on Ratification of the United Nations Convention to Combat Desertification; Law on Ratification of the United Nations Convention on Environmental Impact Assessment in a Transboundary Context; Law on Ratification of the Convention on the Transboundary Effects of Industrial Accidents; Law on Transport of Dangerous Substances; Law on Toxic Substance Production and Trading; Law on Environmental Protection; Law on Strategic Environmental Assessment; Law on Environmental Impact Assessment; Law on Integrated Pollution Prevention and Control; Law on Ionizing Radiation Protection and Nuclear Safety; Law on Protection from Non-ionizing Radiation; Law on Ratification of the Aarhus Convention; Law on Waste Management; Law on Environmental Noise Protection; Law on Chemicals; Law on Air Protection; and Law on Biocidal Products.
- Laws on the transport of dangerous substances and on railway security are being prepared.
- Most new laws attempt to harmonize with the corresponding EU directives and their principles. Environmental laws and regulations to be harmonized with or already harmonized with EU legislation include those on the introduction of genetically modified organisms; the protection of air, water, land, soil, forests and geological

resources; management of chemicals and biocidal products; waste management; protection against ionizing and non-ionizing radiation; and the management of noise and vibration.

- Measures for protection against hazardous substances include: bans and limitations on the production and trade of ozone-depleting substances and products containing such substances; and the export, import and transit of waste.
- The Law on Environmental Protection is fully harmonized with the EU Seveso II Directive.
- The new Law on Chemicals gives a proper basis for sound management of chemicals and includes a new by-law on classification and labelling for the protection of human health and the environment. Further, it envisages the introduction of bans and restriction of production, placing on the market and use of chemicals that represent unacceptable risk for humans and environment (chemicals listed in Annex XVII of the EU REACH regulation, persistent organic pollutants and volatile organic compounds). Provisions prescribed within the new Law on Biocidal Products also provide high protection to human health and environment when biocidal products are placed on the market.
- The Law on Water, currently being implemented, covers water regimes, water management areas, responsibilities for water management (including issuance of water management legislation), water management activities, limitation of owners' and beneficiaries' rights, water cooperatives, financing of water management activities and administrative inspection to enforce the Law.
- The most important laws governing wastewater in Serbia are the Law on Water (from 1991, which is to be harmonized with the EU Water Framework Directive 2000/60/EC), Law on Environment Protection, Law on Public Works and Law on Public Utility Companies.

#### Environmental standards

- Although most of the existing ambient limit values and emission standards for air pollution are not harmonized with the relevant EU directives, such harmonization was expected to be achieved by the end of 2009. Emission standards for wastewater discharge have not been introduced. For certain products (petrol, diesel fuels and emissions from vehicles), standards have been introduced, but they often differ from EU standards.
- The Law on Environmental Noise Protection, adopted in May 2009, is harmonized with EU directive 2002/49/EC. It introduces strategic noise mapping and the preparation of action plans.

#### Strategies and action plans

- Serbia took the first steps towards developing a NEHAP in 2003. Although a draft NEHAP was developed, it was never adopted. It is now considered necessary for it to be revised and updated with a stronger and more committed involvement of the multisectoral stakeholders. The Children's Environment and Health Action Plan adopted in 2009 is considered a good starting-point for the NEHAP.
- The poverty reduction strategy paper prepared in collaboration with the World Bank emphasizes the importance of improving the health conditions of vulnerable groups as one of the main objectives of health sector reform. It states that people with low income, especially women and children, are most severely affected by environmental problems.

- The National Strategy for Sustainable Development contains chapters referring to public health and environmental risk factors (including climate change, waste, chemicals, accidents, radiation, noise and natural disasters) and the special susceptibility of children and young people. During the Fourth Ministerial Conference on Environment and Health in 2004, Serbia accepted the obligation arising from the Budapest Declaration to adopt a national children's environment and health action plan.
- The National Strategy for Youth has a special chapter dealing with the health of young people and the environmental determinants and effects of the environment on the health of young people.
- The government established the multisectoral National Council for Children's Rights in 2002 to define the comprehensive policy towards children through 2015.
- The Serbian Strategy on Tobacco Control (adopted in 2007) emphasizes action to prevent the future initiation of smoking behaviour among young people and reduce exposure to environmental tobacco smoke, in particular among children and youth, in schools and homes.
- The national Children's Environment and Health Action Plan, adopted by the government in 2009, defines key programmes that the government and society as a whole should undertake in the best interests of children and adolescents. The following activities are included: reducing air pollution from cars by appropriate controls and introducing standards for exhaust gases and toxic substances that will reduce respiratory disease in children; reducing children's noise exposure, especially in urban areas; reducing violence through television programmes; supplying clean and safe drinking-water; and introducing environmental topics in educational curricula from elementary to university education.
- The National Environmental Strategy is one of the most important strategic documents relating to the environment. The basic points include preventive and precautionary measures related to health and environment. Specific chapters refer to pollution of water, air, soil and other components of the environment, containing references to health effects. One chapter is dedicated to how a degraded environment affects health.
- Several other strategic documents (including some being prepared) relate to public health.

#### Further comments and recommendations

- The Law on Health Care includes the national programme for protecting health from environmental pollution and its implementation. It also specifies the monitoring and assessment of the effects of environmental factors on human health.
- Many environmental laws cover various industrial sectors, hazards and media. However, most of these laws are not harmonized with EU legislation and do not specifically address children.
- Serbia's laws are being harmonized with EU legislation in an ongoing process; this is an excellent opportunity to strengthen health systems to address the environmental determinants of health.
- Serbia has obsolete legislation that has not been updated in a long time and some conflicting legislation.
- The poverty reduction strategy paper and the National Strategy for Sustainable Development mention the important effects of public health and environment and health on vulnerable groups, especially women and children.
- Children and young people are considered a priority in tackling environmental determinants of health. Children are also a priority in the national health policy, but this has not been translated into specific legislation, action and programmes.

- A national strategy for public health is being developed. The strategy includes environmental health as one of the priority areas that could be used to link actions to the Children's Environment and Health Action Plan and NEHAP.
- A NEHAP has been drafted, and a National Committee for Children's Environment and Health has been established. The government has not yet adopted a NEHAP, but it has adopted the Children's Environment and Health Action Plan.
- Legislation and policies do not define environment and health.
- Lack of funds is one of Serbia's greatest challenges related to environment and health.
- Serbia has no comprehensive policy on transport emissions.
- To provide an overall vision on and framework of approaches to environment and health, a NEHAP and the Children's Environment and Health Action Plan should be developed with appropriate legal, organizational and financial mechanisms to ensure that the relevant health and non-health acts include environment and health.
- Obsolete legislation and sub-legislation should be modernized in the process of harmonization with EU legislation and a specific focus introduced on environment and health.
- The capacity of legislation and enforcement in environment and health policies needs to be strengthened.
- Additional technical and financial support is required to strengthen the capacity in environment and health policy tailored to the situation in Serbia, and the use of opportunities such as EU preaccession funds should be explored.
- Serbia is working to approximate the EU *acquis communautaire*. This is an excellent opportunity to strengthen health systems to address the environmental determinants of health.

#### Comments and recommendations on economic aspects

- No specific central government funds are earmarked for environment and health.
- Project-based funding mechanisms are a threat to the long-term sustainability and independence of the institutes of public health.
- Laboratory equipment to monitor environmental samples has not been modernized in many institutes.
- Municipalities can apply to the national investment plan (bolstered by revenue from the privatization of state-owned companies) for funding the implementation of upgrading plans for their water-supply and waste systems.
- The poor condition of the water sector infrastructure and the insufficient coverage of the cost of services provided largely result from an inadequate tariff policy.
- The polluter-pays principle is not applied due to lack of a relevant by-law to implement it.
- Funds are generally lacking to develop the health and environment sector effectively.
- The economic effects of the environmental burden of disease and injuries have not been estimated in Serbia.
- Economic arguments and the costs of the health effects of environmental pollution are rarely estimated or presented to the policy-makers to argue for preventive measures.
- The health costs of environmental pollution are not sufficiently integrated into policy-making due to the lack of reliable data.
- There is no incentive system to encourage the use of motor vehicles that pollute less.
- The burden of disease due to elevated blood lead concentrations in children has not been estimated in Serbia.
- Leaded petrol is not banned because of economic considerations. Leaded petrol will not be restricted until 2012.

- Programme-based funding is preferred to project-based funding for longer-term planning and sustainable activities.
- It is recommended to more systematically use integrated economic analysis (such as cost–benefit analysis) in environment and health policy-making.
- Experience from other countries in the cost–benefit analysis of interventions in environmental policies and economic instruments should be used and evaluated.
- The review of environment-related taxes from the perspective of health costs and benefits should be strengthened.
- The protection of public health should be considered more strongly in legislation related to the environment and economic development.
- Economic instruments should be applied to encourage enterprises to comply with health and safety standards and to report all cases of occupational disease.
- The government is recommended to establish a budget line specifically allocated to environment and health.

## 6. *Intersectoral collaboration*

- Intersectoral collaboration takes place and has to be ensured in the drafting of national legislation, policies and strategies, in the regulatory process through shared monitoring and evaluation process and approaches and in implementing preventive activities.
- Intersectorality in developing national legislation and regulations collectively is an institutionalized process in Serbia. When a new law or policy is proposed, relevant ministries are consulted before the parliamentary review process.
- Intersectoral committees can also play a major role in managing, monitoring and implementing ongoing policy processes. For the implementation of the Budapest Declaration, the National Committee for Environment and Children’s Health was formed to develop and implement a children’s environment and health action plan in collaboration with relevant stakeholders. This Committee includes representatives of the health, environment and transport ministries together with experts, representatives of NGOs and youth representatives.
- Intersectoral collaboration takes place in joint prevention programmes. It is very successful in health promotion campaigns for which the Institute of Public Health of Serbia works with the mass media, the network of institutes of public health, municipalities, primary health care centres and the education sector.
- Several other developments require a multisectoral and stakeholder approach to policy enforcement. In occupational health, the representative from the Occupational Safety and Health Directorate participates among other representatives in developing harmonized standards within the Institute for Standardization of Serbia.
- However, intersectoral collaboration is not always optimal. For example, no formal link exists between the Water Directorate and the Ministry of Health. The Water Directorate chaired a multisectoral republic committee for a new water law, but the Ministry of Health was not part of this committee and only commented on the draft law. Competencies with respect to water have been divided among different government institutions in recent years, while their collaboration and contacts are quite limited. These conditions significantly slow down the application of the principle of integrated management of water resources. Another example is the lack of cooperation between the Republic Hydrometeorological Service of Serbia and the Ministry of Health on heat-wave warnings.
- There is generally a lack of a coordinated communication strategy and a haphazard method of disseminating data and reporting between all levels of authority, from national to provincial to municipal. This issue has been identified as a major problem.

- Provinces are usually not invited to participate in drafting regulations relevant to environment and health, although they say that they could provide very valuable input, as they are familiar with environment and health problems at the local level.
- Although communication has improved between government and nongovernmental institutions, the responsibility and representation of the various sectors need to be streamlined better. In general terms, intersectoral collaboration still seems to be more efficient at a personal level through personal contacts between the institutions.

#### Further comments and recommendations

- The Sector for International Cooperation of the Ministry of Health is coordinating activities related to environment and health with other ministries.
- Other sectors consider the health arguments more through informal networking rather than through official responsibilities.
- There is generally a lack of a coordinated communication strategy and a haphazard method of disseminating data and reporting between all levels of authority, from national to provincial to municipal.
- The communication and collaboration between the government and NGOs are improving.
- Intersectoral and multisectoral collaboration on environment and health between the health, environment and transport sectors and other relevant sectors needs to be strengthened.
- The leadership and coordination role of the Ministry of Health in environment and health policy involving health and non-health sectors should be strengthened.
- The responsibility, accountability and representation of the sectors in environment and health policy-making require streamlining.
- A specific assessment of roles, responsibilities, monitoring, data collection and coordination relating to environment and health would assist in identifying strengths and weaknesses for addressing and identifying mechanisms of improving and streamlining the current circumstances.
- NGOs should be systematically and regularly invited to participate in the process of developing policy.

### 7. *Tools for action*

#### Environmental impact assessment and health impact assessment

- Environmental impact assessment, based on the Law on Environmental Impact Assessment, has been the most efficient regulatory instrument since it was implemented in Serbia more than 15 years ago.
- Environmental impact assessment foresees any pollution originating from future facilities and other activities and can thus prevent it. As environmental impact assessment is conducted after all the other permits are granted, it represents the final check. It can also be used retrospectively. Serbia is also implementing the Law on Integrated Pollution Prevention and Control, which is essential for controlling large installations.
- Serbia's law specifies which projects require assessment; depending on the government level of approval required (local or national), the province (for national approval) or the local authorities (for local approval) order assessment and review or approve the project.

- Strategic environmental assessment is generally conducted before corresponding environmental impact assessment is undertaken. This means that information on the environmental impact of a plan will be able to cascade down through the tiers of decision-making and be used in environmental impact assessment at a later stage.

## Monitoring

- Monitoring of environment and health parameters can be used to indicate the level of compliance with a standard and for assessing trends over time.
- The Institute of Public Health of Serbia performs a national health survey every five years. The next survey will take place in 2011. The national health survey needs to include the environmental determinants of health.
- The Environmental Protection Agency identifies and monitors environmental hazards. One of the Agency's objectives includes completing an integrated environmental monitoring and information system. The Ministry of Environment and Spatial Planning was charged with creating and implementing these systems in collaboration with other ministries and departments.
- ENHIS is considered to be a driving force for analysing the environment and health situation in Serbia. The analysis is nevertheless mainly done at the national level due to lack of data for the regional and local levels.
- Municipalities are required to monitor the environment. The institutes of public health monitor air and water at the provincial level, financed by the local authorities, and usually provide data on request. Regular monitoring comprises: air quality; the quality of aquatic ecosystems; soil quality; endangered plant and animal species and their communities (biomonitoring); and airborne allergens.
- Various ministries are responsible for monitoring water. The Ministry of Health is responsible for monitoring the quality of drinking-water and recreational waters and school and rural water-supply systems. The Republic Hydrometeorological Service of Serbia, institutes of public health and other specialized organizations and institutes are responsible for monitoring water quality. The institutes of public health monitor the quality of surface water, groundwater, aquifers and reservoirs under the responsibility of the Republic Hydrometeorological Service of Serbia and based on a two-year programme adopted by the government.
- The chemical and biological quality of drinking-water in the distribution networks and groundwater used by water-supply companies is monitored regularly. The water is measured to determine compliance with EU chemical and biological standards. The laboratories of the institutes of public health monitor and interpret these data, and the Ministry of Health pays for this. In case of quality problems, the Sector for Sanitary Surveillance and Inspection of the Ministry of Health can ban the affected water systems.
- No central registry for children's accidents has been established in Serbia, although the Institute of Occupational and Radiological Health is developing a national injury database. The information system on road crashes relies on data collected by the police. Nevertheless, this information is not detailed enough to enable localized interventions addressing crash hotspots.
- Air quality monitoring in Serbia focuses on ambient air quality but does not cover all priority areas, and some aspects are limited in scope. The government has established the national programme for air quality control for two-year periods. The first air quality control programme was established in 1993 based on the regulations on limit values, emission measuring methods, sampling criteria and data collecting, EU documents and recommendations by the World Meteorological Organization and WHO.

- The Republic Hydrometeorological Service of Serbia provides weather forecasts and trajectories to predict the trends in urban air pollution.
- Chemical contaminants in soil are measured periodically, and the Ministry of Agriculture, Forestry and Water Management is responsible for the results and measurement. The institutes of public health measure the concentrations of lead, pesticides and polychlorinated biphenyls (PCBs) in soil. However, adequate legislation is lacking to control hazardous substances in the soil.
- The Institute of Occupational and Radiological Health monitors radiation. The monitoring has been performed for the past 40 years and has been performed in compliance with the national rules governing this since 1996.
- City public health institutes monitor noise levels in several major cities.
- The meteorological services regularly monitor the ultraviolet index, and newspapers and television report this daily.

Other tools covered in the report relate to capacity-building and communication.

#### Further comments and recommendations

- There is a shortage of specialists in environmental epidemiology, toxicology and environment and health policies.
- The national health survey conducted every five years does not systematically and comprehensively cover environment and health topics.
- Equipment and capacity are lacking to effectively monitor and respond to environment and health issues and concerns.
- Monitoring is performed individually in the health or environment sector, but combined health and environment data are lacking.
- The laboratories of the institutes of public health are not equipped properly to measure all relevant pollutants. For example, most laboratories of the institutes of public health do not measure PM<sub>10</sub> and ozone (as of 2008) except for Nis, Novi Sad and Belgrade.
- There is little awareness of environmental risk factors in society, such as environmental tobacco smoke and noise.
- There is no recognized national centre for environment and health expertise that can develop and upgrade national programmes, provide training and capacity-building and maintain a high quality of environment and health assessment.
- Education and training dedicated specifically to environment and health are not strong in the curriculum of health and environmental professionals but instead incorporated into thematic topics.
- Environmental impact assessment procedures should be strengthened further. The legal framework for environmental health impact assessment needs to be developed further.
- Health impact assessment procedures should be developed further. Knowledge and application of health impact assessment methods need to be improved given the new public health strategy.
- The use of strategic environmental assessment should be expanded.
- The two official regulations on air quality from 1997 being used for monitoring emissions need to be revised and updated.
- Greater public information should be provided on the right to health information, environmental information and the burden of disease attributable to environmental risk factors.
- Public participation in decision-making should be encouraged further.
- The further development and implementation of the national environment and health information system, building on the work already performed with ENHIS, should be given priority.



- The training of environment and health specialists needs to be intensified, including international training for a limited number of specialists and participation in international research projects.
- The Ministry of Health should increase the resources available to the departments of the institutes of public health addressing environment and health issues for assessing and investigating health effects and developing a communication structure for providing feedback to the reporting regions and districts.
- Other sectors should support and finance structures for communicating on the status of environmental risk factors.
- Public information and awareness-raising should be promoted.
- A legally responsible public authority is required for regular inspection of rural water supplied by non-public providers.
- Greater communication and coordination in the water sector is required between the institutes of public health, the Republic Hydrometeorological Service of Serbia and the Directorate of Water. The responsibilities regarding monitoring of water should be streamlined between ministries.
- Legislation should be developed for wastewater.
- A procedure should be established for sharing environmental monitoring and human exposure data with the health sector.
- The participation of province-level stakeholders in drafting regulations relevant to environment and health could provide valuable input due to their familiarity with environment and health problems at the local level.
- A national centre of excellence for environment and health assessment should be created.
- An integrated chemicals registry should be developed.

## **Conclusions and recommendations**

### Conclusions

- The Constitution stipulates everyone's right to a healthy environment and everyone's obligation to preserve and improve the environment.
- The Law on Health Care includes the national programme for protecting health from environmental pollution and its implementation. It also specifies monitoring and assessment of the effects of environmental factors on human health.
- There are many environment-related laws covering various industrial sectors, hazards and media, but most of these laws are not yet harmonized with EU legislation. (This situation is changing.)
- In recent years, the government has initiated activities and investment in environment and health systems to address the environmental determinants of health in accordance with EU standards and WHO initiatives.
- Based on regional exposure and national health statistics, WHO estimated the burden of disease from environment and health risks to be as high as 27% of the total burden of disease in Serbia and Montenegro in 2004.
- The government has clearly expressed political will by adopting the Children's Environment and Health Action Plan in 2009 in response to its commitments from the Budapest Conference in 2004.
- The priorities in environment and health for Serbia include:
  - access to safe drinking-water in rural areas
  - access to sanitation
  - road crashes
  - air pollution
  - children's exposure to environmental tobacco smoke
  - lead in gasoline.

### Stewardship

- A clear vision for environment and health policy is not evident in Serbia.
- The absence of a specific dedicated environment and health unit or capacity in either the Ministry of Health or the Ministry of Environment and Spatial Planning has resulted in a lack of consistent and coherent policy actions and communication on environment and health.
- To implement the Budapest Declaration and the Children's Environment and Health Action Plan for Europe, the government adopted the Children's Environment and Health Action Plan with the participation of relevant stakeholders.
- Serbia is in the process of harmonizing its current laws with EU legislation, which will result in the replacement of obsolete national laws related to environment and health. This is an excellent opportunity to strengthen health systems to address the environmental determinants of health.
- The evidence base produced in Serbia linking health and the environmental risks is too weak to be useful for policy-makers to set priorities. Serbia reports on only 7 of the 29 indicators in the ENHIS database despite collecting data on 70% of these indicators.
- Civil society and social partners are very weakly represented in environment and health. They are mainly involved through environmental organizations, which are unable to fully represent the health perspective in the process of developing and implementing policy.

### Resource generation

- The human and technical resources available in environment and health are limited, resulting in insufficient monitoring, reporting and evidence-based policy actions.
- Education and training in environment and health are not strong in the curriculum of health and environmental professionals. Many areas are covered through topical themes, but environment and health is often not considered as a distinct discipline.
- The national and district institutes of public health provide key resources to support stewardship and service delivery in environment and health.
- Equipment and facilities for environment and health research purposes in institutions and universities are often outdated and need to be modernized.
- The data on exposure are usually not linked with the data on health outcomes, resulting in very limited risk assessment activities in Serbia.

### Service delivery

- Monitoring and inspection services are not well coordinated between ministries and institutions in most areas, such as water, air quality, radiation, food safety and hazardous chemicals.
- Although the movement towards sustainable development in Serbia is evident, a reactive (curative) approach is still the predominant method in the health system rather than a proactive (preventive) approach. The ongoing health reform projects, especially in primary health care, are focused at moving towards prevention.

### Financing

- The government has no budget planning and reporting process dedicated to overall environment and health. There is a gap between the available financial resources and the services mandated by law.
- In the national institutes, activities are based on short-term projects rather than long-term programmes.
- The environmental inspection services and a fund for environmental protection enforce the polluter-pays principle. The funds obtained are invested in improving the state of the environment.

## Recommendations

- The government is encouraged to support, commit and invest in strengthening the health system to address environment and health issues aiming at reducing the burden of disease in the population resulting from environmental risk factors. To ensure an effective response to environment and health issues, specific and appropriate human and financial resources should be allocated to environment and health as one of the key elements of the health system addressing public health services.

## Stewardship

- A national environment and health action plan should be developed and implemented in Serbia as a national strategic direction for protecting public health from environmental risks.
- A specific unit or capacity dedicated to environment and health should be formally established within the Ministry of Health. This unit or capacity would provide strategic guidance and greatly support policy development while ensuring the strengthening of formal communication lines and ministerial-level links with other relevant ministries such as the Ministry of Environment and Spatial Planning and Ministry of Agriculture, Forestry and Water Management.
- The Ministry of Health's efforts in environment and health would benefit from more intense support from other ministries and result in enhanced capacity to develop the content of national policy and legislation on environment and health in all sectors.
- An interministerial body to coordinate the development and implementation of strategies, action plans and legislations related to environment and health is suggested. This could be based on the National Committee for Environment and Children's Health.
- The roles and responsibilities overlapping between the ministries and various institutions need to be clarified. The monitoring and inspection activities of the various institutions and governance in environment and health should be evaluated in depth to identify the most appropriate resource allocation, preventing duplication and promoting the sharing of relevant information and action.
- Financial and human resources support is recommended for implementing the Children's Environment and Health Action Plan.
- Priorities for the Children's Environment and Health Action Plan should be agreed with the stakeholders. The sustainability of the implementation should be addressed using the framework of health system functions (stewardship, resource generation, financing and service delivery) to ensure that all aspects for health system development are incorporated into planning for all sectors of the government and administration.
- The Children's Environment and Health Action Plan should be linked with the development of a NEHAP, local environment and health action plans and other relevant existing policies and action plans relevant for environment and health.
- The harmonization of Serbia's laws with EU legislation should be used as an opportunity to identify additional technical and financial support from both national and international sources and to strengthen the capacity in developing and implementing environment and health policy tailored to Serbia.
- The collation of data and reporting to the ENHIS database should be expanded to more indicators. Most of this can be achieved by improving the sharing of collected data and can be performed with limited capacity over a short period. Following this, reporting on additional indicators that require more capacity should be developed. Indicators of ENHIS can also be used at the subnational level to better monitor regional differences, trends and particularities.
- The participation of civil society and social partners in the process of policy-making and implementation needs to be strengthened. The support and development of NGOs

specializing in environment and health and information-sharing with civil society needs to be enhanced to increase the awareness and empowerment of the public in environment and health.

- Environment and health issues should be integrated into formal and informal educational systems. They should also be incorporated into the school curricula in primary and secondary schools.

#### Resource generation

- Investment in human and technical capacity should be enhanced. This capacity development should be an integral part of the planning and implementation process for Serbia's Children's Environment and Health Action Plan and NEHAP in the coming years.
- Education of both health and environmental professionals in environment and health should be broadened and deepened by including environment and health subjects in the educational curriculum and in the continuing education programmes for public health professionals and doctors and nurses in primary and secondary health care. The development of a specialization in environment and health should be encouraged in collaboration with the Ministry of Education, Ministry of Health and Ministry of Environment and Spatial Planning.
- Capacity-building and empowering of the Institute of Public Health of Serbia and of the network of institutes of public health should be a high priority.
- The capacity of research and development in environment and health should be strengthened. Updated and upgraded capacity in accordance with the international standards of good practice is recommended.
- Public funding for research in environment and health should be increased and environment and health researchers motivated through recognition, compensation and career opportunities.
- Environmental epidemiologists should analyse exposure data in relation to health data to promote evidence-based decision-making in environment and health. The broadening of current databases or establishing a specific database to enable analysis of both health and environment data is recommended.

#### Service delivery

- The delivery of various environment and health services implementing environment and health policies through monitoring and control activities should be streamlined and better coordinated across the different providers and possibly integrated for effectiveness and efficiency.
- Services at public health institutes (such as risk assessment and risk communication as a public health service) and at primary health care centres (such as health education and counselling as individual health services) should be strengthened, addressing the population's needs in basic environmental and occupational health services. The community-based preventive approach to environment and health should be encouraged.

## Financing

- It is recommended that the government and responsible ministries allocate sustainable public funding for environment and health. Current environment and health activities would benefit from longer-term project periods or institutionalized programmes based on regular budgets.
- Funding opportunities from other sectors such as transport, labour, economy and education could be explored and utilized if they are relevant to environment and health.
- The cost of environment and health services can be partly financed by contributions from the polluting industries or individuals. Passing of by-laws enabling effective enforcement and financing activities is recommended.

## F. Slovakia

### 1. Key national health characteristics

- Life expectancy at birth (2005): 70 years for men; 78 years for women.
- Major causes of death (2004): cardiovascular (circulatory) diseases (55%), cancer (22%), respiratory infections and diseases (7%) and external causes (3%).
- WHO estimate of the environmental burden of disease: 16%.

### 2. Key effects on children

- Mortality due to road traffic injuries among young people (0–24 years) is 8.15 deaths per 100 000 population.
- Mortality due to other unintentional injuries among children (1–19 years old) is 2.71 deaths per 100 000 population.
- Infant mortality resulting from respiratory diseases was 8.34 per 1000 live births in 2001.
- Respiratory diseases are the most common reasons for children's absence from school because of sickness; allergic diseases are predominant.

### 3. Identified environment and health priorities

- Water and sanitation

In 2006, 86% of the population was connected to the public water supply and 57% of the population was connected to a sewerage system. In rural areas, 45% of the population is not connected to sanitation facilities and 48% of the population is not connected to wastewater facilities.

In 2006, mandatory requirements for the quality of bathing water were complied with in 46% of cases in freshwater zones and in 92% of the coastal bathing areas.

- Air pollution

Among children 13–15 years old, 79% are exposed to environmental tobacco smoke at home. The mean concentration of particulate matter (PM<sub>10</sub>) for four cities in Slovakia is 34 µg/m<sup>3</sup>. Among children aged 0–14 years, 5% are exposed to the use of solid fuels in the home, much lower than in many other countries in the WHO European Region.

High nitrogen dioxide (NO<sub>2</sub>) exposure (both outdoors from road traffic-related air pollution and indoors from gas used for cooking or heating in 70–80% of houses), dust mites and mould are further problems affecting respiratory health.

- Unintentional injuries to children

Mortality due to road traffic injuries among people 0–24 years old is 8.15 deaths per 100 000 population, and mortality due to other unintentional injuries among young children (1–19 years old) is 2.71 deaths per 100 000 population.

- Chemicals from landfills  
About 100 locations in Slovakia are considered to be at risk because of old waste or landfill sites (heavy metals in water) and the production of nickel and special medicines.

#### Further comments and recommendations

- Environment and health risks are major determinants of health.
- The priority of the health system is health care rather than public health. The Ministry of Health focuses on a curative approach rather than preventive action.
- The development of the health care system is not homogeneous across the different ethnic and social groups (such as the Roma population).
- The level of exposure to environment and health threats reflects socioeconomic inequality.
- Changes in government create difficulty in sustaining an intersectoral approach in environment and health.
- Frequent changes in personnel and a lack of qualified staff create difficulty in implementing the NEHAP.
- Action and programmes are fragmented among various actors for inadequately explained reasons, reducing efficiency.
- Communication between the sectors is inadequate.
- There are not enough reliable data; support from WHO is required for this.
- Appropriate tools for environment and health information are lacking.

#### 4. *Institutional set-up*

Slovakia is a parliamentary republic and joined the EU in 2004.

- The Ministry of Health is the main state executive body responsible for health protection and health care. It sets the main priorities of state health policy and submits the relevant necessary draft legislation to the government. It has no separate department in charge of environment and health.
- The Public Health Authority is the main authority dealing with health risks related to environmental factors in Slovakia. The Public Health Authority serves as the executive body of the Ministry of Health in public health and environment and health through its Department of Environment and Health. All public health issues are delegated to the Public Health Authority. The Public Health Authority's specialized activities in environment and health are health protection in environmental hygiene, children's and young people's health, nutrition, food safety, cosmetic products, preventive occupational medicine, health protection against radiation, epidemiology, medical microbiology, health promotion, health statistics and factors related to living conditions. The Public Health Authority has the following main tasks: drafting and commenting on legislation and drafts for all strategies; conducting monitoring, control and surveillance and supervising monitoring (drinking-water and bathing water); maintaining contact with the EU; and carrying out technical supervision. It can impose restrictions on the use of drinking-water if it represents a danger to health and on bathing water that does not meet requirements. It can also ban or restrict the market launch, sale or use of cosmetic products if these endanger public health. The Authority's operations cover all of Slovakia, working through a network of 37 regional public health authorities. The municipalities are then responsible for imposing penalties, approving permits for local construction, etc. A substantial part of the Public

Health Authority's capacity is devoted to issuing permits and approvals of various actions that may be related to environment and health.

- The Ministry of Environment has core responsibility for environmental protection and is responsible for evaluating the levels of risk from environmental pollutants and for developing strategies, activities and projects. It is in charge of monitoring outdoor air pollution according to EU requirements but without specific consideration of the health aspects. The Slovak Hydrometeorological Institute performs most outdoor air monitoring under the direction of the Ministry of Environment.
- The Slovak Environmental Agency is responsible for environmental protection and landscape planning in accordance with principles of sustainable development. The Agency provides expertise to the Ministry of Environment and functions as an advisory technical body. Financed by the Ministry of Environment until 2001, the Slovak Environmental Agency now receives only partial funding from the Ministry, its remaining funds being project-related. Its structure consists of a headquarters in Banská Bystrica and seven specialized centres throughout the country.
- The Ministry of Transport, Posts and Telecommunications also addresses public health. A special unit is responsible for occupational health, food safety, educational health, epidemiology and noise in the specific context of railway workers. The Ministry is responsible for environmental hazards such as water, waste and indoor air near railways. The Ministry is mainly responsible for the strategic and conceptual development of environmentally sound and safe transport infrastructure.
- The Ministry of Education develops and finances projects on environmental and health education, focusing on environmental protection projects or health promotion campaigns at the school level. However, the health effects of environmental hazards and environmental measures are not addressed explicitly.
- The Ministry of Economy is the central authority for controlling and managing hazardous chemical materials, biocides and detergents. It is also the central authority of the state administration responsible for industry, energy, heating and gasworks industry and trade and consumer protection. The Ministry assesses the impact of hazardous materials and substances and is responsible for spot checks of packaging and for ensuring that new products comply with international regulations. In implementing the new EU regulation on Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), the Ministry functions as an intermediary between industry and the international regulations and has an advisory capacity for enterprises. Several centres under the Ministry of Economy are responsible for controlling and managing hazardous substances: the Centre for Chemical Safety, Centre for Chemical Substances and Preparations and Consumer Institute.
- The Ministry of Agriculture has the main responsibility for monitoring food safety. Since 1996, it has been responsible for assessing food contamination (including in soils and forests) in collaboration with the Public Health Authority and the Ministry of Environment. The main focus is on soil, water, fauna and flora, with irrigation water, water for animals and processing water subject to particular analysis.
- The Ministry of Construction and Regional Development deals with the urban and regional development aspects of environment and health, mainly under its regional development strategy. The Ministry is responsible for controlling contaminants in building and construction materials and their effects on health. The Urban Planning Department assesses the quality of building surroundings and reviews urban plans according to health requirements.
- The Ministry of Labour, Social Affairs and Family focuses on children's protection from an environment and health perspective only in terms of occupational health and the provision of drinking-water for the Roma population. It supervises the labour court and stipulates the conditions under which children are entitled to work. The Ministry



- sets its priorities for the social inclusion of minorities and work to combat poverty (2006–2008) and has made the provision of drinking-water one of its main objectives.
- Municipalities are the basic unit of local government. Municipalities are responsible for ensuring the drinking-water supply; they own public water-supply systems or public wells, which have to comply with mandatory hygiene requirements. The municipalities do not have environment and health departments, and their status, functions and capability of addressing other environment and health issues have not been systematically organized.
  - Public participation in the development of and policies related to environment and health services can be channelled through the work of NGOs, and there are now hundreds of NGOs across the country. However, none deals directly with environment and health. Nationally, the role of NGOs is mostly awareness-raising rather than attempting to influence regulations related to environment and health.

#### Further comments and recommendations

- The role of physicians in the environment and health process is not well defined; they are mainly seen as the interface with civil society but have no specific responsibility related to environment and health.
- The curative approach has always been emphasized rather than prevention. Disease prevention is limited to preventive examinations and vaccinations; this results in little involvement of paediatricians in environment and health.
- The Slovak medical associations do not sufficiently recognize the environmental determinants of health.
- Numerous institutions and sectors deal with environmental risk factors, but health arguments are not predominantly or explicitly linked to the reduction of environmental risks.
- Local governments implement environment and health measures mainly through instruments related to construction and urban planning.
- Environmental impact assessment is mainly delegated to private environmental services.
- The existing capacity of the national and regional public health authorities and centres should be upgraded and strengthened.
- Physicians should be more actively involved in preventive action – better information generated by the Public Health Authority and direct collaboration with medical societies would help in this task.
- Improved and stable employment opportunities for environment and health professionals should be created.
- Continuing professional education for environment and health professionals should be introduced and university curricula adapted.
- Environment and health NGOs representing public and professional interests in environment and health policy- and decision-making should be strengthened.

## 5. *Tools for management and legal framework*

- Slovakia's Constitution mainly refers to environment and health in relation to achieving safe working conditions. The Constitution stipulates the right to a favourable environment and the duty to protect and improve the environment. All citizens have the right to adequate and timely information on the state of the environment and its changes and their consequences.
- The government manifesto is secondary legislation that provides for statutory control of environmental protection. Its major provision concerns the protection of environmental components, stewardship of the environment and the rational use of resources. Regarding environment and health, the manifesto sets out the relationship between the quality of urban development and physical activity.
- The main issue in ensuring health is controlling the quality of food products through integrated control of the whole food chain. The objectives are a high level of protection of people's health, protection of consumer rights and the food security of the state.
- The main legal instrument relevant to environment and health is the new Public Health Act. Aspects of the Public Health Act relevant to environment and health are the recognition of the environment as a basic determinant of health, alongside lifestyles, genetic factors and health care. The environment is defined as the physical, chemical, biological and economic factors of the living and working environments related to public health. The Act focuses on children. It increases the responsibility of the Public Health Authority in ensuring specialized testing of the components of the living and working environments and of biological material and monitoring of drinking-water and bathing water quality. Particular emphasis is placed on the organization of the work at different levels (regional authority and municipal levels).
- The National Health Programme is designed as a system of rapid response to actual health problems, aiming at reducing health risk factors. It includes the methods, measurements required, tools and activities to be implemented by the Public Health Authority and monitored by the Ministry of Health. The Public Health Authority coordinates the Programme and associated projects and assesses the health effects of the Programme using WHO health impact assessment methods. Of the 11 priorities set, the policy commitments relevant to environment and health concern: healthy lifestyles, preventing injuries, healthy working conditions, healthy living conditions and physical activity.
- The Construction Act establishes building standards that will ensure a high-quality living environment. It contains provisions on the safety of the materials and construction methods used and sets building quality standards that have been approved by the Public Health Authority.
- At the local level, the municipal acts include policy commitments relevant to environment and health, laying out the legal obligation of municipalities to create and promote healthy lifestyles through adequate environments, among others.

### NEHAP

- The NEHAP provides a general framework and understanding of priorities in environment and health and a basis for placing environment and health higher on the political agenda. The government updated and approved the NEHAP in 2000 and set the following priorities: food safety, air pollution, provision of drinking-water, health promotion in the working environment, housing, environment and health services, public relations and relations with NGOs and education and training in environment

and health. Two local environment and health action plans have been developed (for Nitra and Banská Bystrica).

- The government revised the NEHAP in 2005 after the Fourth Ministerial Conference on Environment and Health and approved it in January 2006. The NEHAP included the main regional priority goals of the Children's Environment and Health Action Plan for Europe, and 43 measures with corresponding tasks were formulated.
- The new NEHAP covers the following priority issues: the four regional priority goals in the Children's Environment and Health Action Plan for Europe; biomonitoring; the environment and health information system; climate change and health; and research, education and training on environment and health.
- Policy commitments by the sectors involved in the NEHAP include: the Ministry of Labour, Social Affairs and Family, Ministry of Economy and Ministry of Education. Through the Public Health Authority and its Department of Hygiene and Environment, the health sector is responsible for leading NEHAP implementation.
- The Children's Environment and Health Action Plan for Europe has been an effective tool in helping the different sectors to strengthen their internal focus on environment and health when setting their priorities and planning their activities. The way the regional priority goals are formulated makes the Children's Environment and Health Action Plan for Europe feasible and implementable.

#### Economic aspects

- Lack of funds is one of the biggest challenges in the country's environment and health sector. Except for the national health promotion programme, budgets are not automatically attributed to a programme or strategy when the government adopts it. If a sector plans or implements activities and programmes related to environment and health in the framework of the NEHAP, it needs to apply for funds annually.
- Sources of funds can be very different; for example, state lottery money has funded the NEHAP-related activities of the Ministry of Labour, Social Affairs and Family. The lack of funds for environment and health structures is also reflected at the local level. Local authorities have to implement project activities from the municipal budget but rely on some form of additional funds from the ministerial level.
- The Ministry of Finance provides no economic support or involvement. Although the Ministry of Economy is part of the environment and health process through the NEHAP, it does not make any financial contribution to ensure implementation of the process. Environmental and health aspects are taken into account only marginally.
- Although environment and health does not receive any privileged support, the application criteria for project proposals take account of the effects of proposed strategies on health.

#### Further comments and recommendations

- The country's political principles (the Constitution and the government manifesto) give priority to environmental protection; environment and health and public health are acknowledged mainly in relation to food safety, physical activity and occupational safety.
- The main determinants of public health, as recognized by the new Public Health Act, are the environment, lifestyles, genetic factors and health care.
- Children and young people are considered a priority in tackling environmental determinants of health through the Public Health Act; children are also a priority in the state health policy, but this is not translated into specific actions and programmes.

- The priorities of the national health promotion programme are in accordance with the priorities of the Children's Environment and Health Action Plan for Europe.
- Partnership among institutions and sectors is recognized as an essential tool for supporting public health (Public Health Act, the national health programme and the state health policy).
- Partnerships between particular components of society are recognized as supporting and helping to improve public health.
- The need for health impact assessment is recognized.
- The importance of public health is acknowledged at the local level through municipal acts that include the legal obligation to create the conditions for and promote healthy lifestyles.
- Other legally binding documents addressing environmental risk factors do not always give priority to health.
- Financing mechanisms and institutionalized mechanisms for supporting partnerships in public health should be created.
- The quality of health impact assessment should be assured through training and certification in standardized methods (based on WHO recommendations).
- In the NEHAP, education in environment and health focuses mostly on specific issues rather than on professional education.
- The NEHAP is not currently strong enough to ensure the inclusion of environment and health in the relevant health acts; it should be made more binding.
- Institutional and human resources should be allocated to implementation of the NEHAP, both in the relevant sectors and institutions and to ensure coordination in the health sector.
- Environment and health has no regular funding.
- When the government adopts an environment and health programme, a budget is not automatically attributed to it.
- Related ministries (such as the Ministry of Finance) welcome the environment and health activities but do not provide any financial contribution.
- Shortages in general resources (human and financial) at the Public Health Authority create difficulty in working in environment and health.
- Budget allocation to the various public health priorities is not transparent.
- Budget allocation does not automatically reflect health outcome priorities (such as preventing injuries).
- Structural funds from the EU mainly support the water sector.
- Economic arguments and health costs are not used for setting priorities or for informing or convincing policy-makers to take preventive measures.
- Economics at the personal level are used as an argument, whereas the public health economic argument is not.
- Innovation in strategy is strongly supported, but the fact that a strategy is environmentally sound or promotes health is not used as an argument (Ministry of Economy).
- There is no comprehensive policy related to transport emissions.
- The use of economic instruments such as emission trading schemes should be extended.
- Integrated economic analysis (such as cost–benefit analysis) should be used more systematically in environment and health policy-making.
- Existing environment-related taxes should be reviewed from the perspective of health expenditure.
- The protection of public health should figure more prominently in legislation related to both the environment and economic development.

- Economic instruments should be applied to encourage enterprises to observe health and safety standards and to report all occupational disease.

## 6. *Intersectoral collaboration*

- Intersectorality in developing national legislation and regulations is an institutionalized process in Slovakia. All government regulations have to go through an intersectoral consultation process before being sent for approval to the government. Representatives of all ministries have to approve the draft or make comments as appropriate.
- To ensure multisectoral involvement by the Ministry of Health, the state health policy stipulates that the Minister report to parliament on multisectoral achievements. This applies not only to general collaboration across the sectors but also when dealing with very specific diseases (communicable diseases). Representatives of ministries are members of the Ministry of Health coordination board for state health policy, which encourages their interest in this area.
- The state secretary of health is responsible for coordinating activities with other sectors, especially in environment and health.
- Regulations governing interaction between national and local administration recognize the need for collaboration between different sectors and operational levels within the health sector. The Public Health Act states that the regional public health authorities are obligated to cooperate with the relevant departments, units and individuals at the municipal level.
- The NEHAP presents multiple opportunities for intersectoral collaboration in preventing health outcomes resulting from environmental risks.

### Further comments and recommendations

- Other sectors seem to consider health arguments verbally but not in practice.
- Intersectoral collaboration in transport (Road Safety Council, joint action plan, NEHAP and NGOs) is well developed.
- At the local level, establishing a master plan entails collaboration between all sectors.
- The leadership of the Ministry of Health in the environment and health process should be strengthened.
- Dialogue between sectors at the regional level should be strengthened.

## 7. *Tools for action*

### Monitoring

- Monitoring of environment and health parameters can be used to indicate the level of compliance with a standard and assess trends over time. Except for the hazards monitored in accordance with EU legislation, Slovakia has no national legal requirement for monitoring environmental indicators nor any sanction if the necessary data are not provided.
- The National Health Information Centre collects health data, but public health monitoring is also conducted at the local level. Municipalities have the obligation to report to the city council on the health status of the inhabitants. An annual report on the health status of Bratislava has been drawn up every year since 1996 and includes an overview of preventive measures taken at the local level. The Ministry of Health is obligated to submit a report on the health status of the population to all other ministries

once every two years, giving information on all health risks, including environmental determinants of health.

- The Slovak Environmental Agency is the lead agency in monitoring and cooperates with the Centre for Waste Management. It uses standard indicators, as defined by existing international agencies (the European Environment Agency, Eurostat and OECD), and sustainable development indicators, primarily to provide the internationally required statistical data. It produces a yearly report on the environmental situation in the country.
- One of the government's long-term objectives is to complete an integrated environmental monitoring and information system. Until the end of 1993, Slovakia had no comprehensive system for environmental evaluation based on regularly monitored indices.
- ENHIS is considered to be a driving force for analysis of the environment and health situation in the country. However, this is mainly done at the national level because of the lack of data for the regional and local levels.
- The Public Health Authority monitors drinking-water and bathing water at the consumer level, whereas the water-supply operators are responsible for monitoring the water quality at the supply level (source). Water research institutes collect data on the quality of water along the whole production and delivery chain.
- The Ministry of Environment is responsible for monitoring air pollution, the work being carried out by the Slovak Hydrometeorological Institute. However, the Ministry of Transport, Posts and Telecommunications is in charge of monitoring the effects of transport on the environment. PM<sub>10</sub> has been monitored regularly since 1999, and the results are reported annually. PM<sub>2.5</sub> is also monitored regularly. The Public Health Authority analyses data on air quality.
- Controls have been undertaken and data collected on food contamination since the 1990s but not on a systematic, preventive basis. Data on food contamination are collected when problems and outbreaks occur. In 1996, an environmental monitoring system was established under the leadership of the Ministry of Environment, focusing on 12 subsystems. The Ministry of Agriculture is responsible for assessing three subsystems – soil, water (irrigation and animal consumption) and fauna and flora – and food contamination monitoring. The assessment of food contamination is undertaken in cooperation with the Public Health Authority and the Ministry of Environment. The health sector is responsible for nutrition. The Food Safety Department is responsible for three main areas: (a) monitoring of contaminants in selected locations; (b) food basket analysis; and (c) analysis of wildlife and fishery.
- Agricultural soil is monitored every 5 years at 50 stations. The main parameters analysed are cadmium, mercury, lead, arsenic, nickel, nitrates and polychlorinated biphenyls (PCBs).
- Slovakia has considerable data available on health trends and on specific environmental parameters but needs to develop homogeneous collection mechanisms and processing procedures, and the available data are not systematically communicated to the public.

## Environmental impact assessment and health impact assessment

- Environmental impact assessment was introduced in Slovakia by means of the Act on Environmental Impact Assessment in 1994. It provides a comprehensive approach to strategic environmental assessment and includes the requirement to assess development policies and legislative proposals in relation to their assumed impact on the environment. Article 35 of the Act on Environmental Impact Assessment presents a brief procedure for environmental assessment that is obligatory for proposed development policies in energy supply, mining, industry, transport, agriculture, forestry and water management, waste management and tourism.
- The Ministry of Environment is responsible for environmental risk assessment and for environmental impact assessment (specific projects, activities, policies and action plans). Other ministries, as well as regional and local authorities, also participate in the impact assessment process. The Ministry of Economy gives its expert opinion on the environmental impact assessment conducted by the Ministry of Environment based on its sustainability criteria.
- Since 1992, the Ministry of Transport, Posts and Telecommunications has been responsible for research on the effects of transport on environment, carried out mainly by the Institute of Transport and focusing on emissions from transport.
- The municipalities are ultimately responsible for implementing the results of environmental impact assessment for proposed projects and have to issue or deny construction permits. Authorized companies commissioned by the Ministry of Environment, the Ministry of Health and the Ministry of Economy perform the environmental impact assessment. Private developers need to pay for two assessments: the environmental impact assessment and the “counter-assessment” commissioned by the Ministry of Environment.
- According to law, environmental impact assessment should also include health impact assessment. However, whether or how thoroughly the health impact assessment is carried out is not clear. When health impact assessment is performed, it is done by private companies and not the health sector and often also includes social impact assessment. There is no uniformity in the methods used.

Other tools covered in the report are capacity-building and communication.

### Further comments and recommendations

- Many agencies and institutions perform public health monitoring at different levels (national, municipal, etc.).
- Monitoring concerns either health or environment; combined health and environment data are lacking.
- The health sector seems to inadequately cover health impact assessment.
- The existing procedures for health impact assessment do not seem to be well developed.
- The current medical curriculum does not focus on environment and health and prevention.
- There are not enough experts with strong environment and health knowledge.
- There is no specialized or supplementary training for paediatricians in environment and health issues.
- In both secondary and primary schools, environment is dealt with as an intersectoral subject, and the health effects of environmental factors are not examined explicitly.
- There is little awareness of environmental risk factors in society, such as environmental tobacco smoke and noise.

- No recognized national centre for environment and health expertise is able to develop and upgrade national programmes, provide training and capacity-building and maintain a high level of environment and health assessment.
- Environmental impact assessment procedures should be strengthened further.
- Health impact assessment procedures should be developed.
- The use of strategic environmental assessment should be expanded.
- More public information should be provided about the right to health information, environmental information and the burden of health attributable to the environment.
- Public participation in decision-making should be encouraged.
- The Slovak Environmental Agency should be used better for strengthening ENHIS at the national level.
- The further development and implementation of the National Environmental Health Information System should be given priority, building on the work already done, and current work on environmental health impact assessment should be expanded further.
- Both the knowledge and application of health impact assessment methods should be improved based on the new Public Health Act.
- The legal framework for environmental health impact assessment should be developed further.
- The training of environment and health specialists should be intensified, including international training for a limited number of specialists and participation in international research projects.
- The Ministry of Health should increase the resources available to the Environmental Health Department of the Public Health Authority for assessing and investigating health effects and developing a communication structure for providing feedback to the reporting regions and districts.
- Other sectors should support and finance structures for communication on the status of environmental risk factors.
- Public information and awareness-raising should be promoted.
- A national centre of excellence for environment and health assessment should be developed.

## **Conclusions and recommendations**

- The health sector agenda poorly reflects the prevention of risks resulting from environmental hazards. The preventive approach should be strengthened.
- There is no regular funding of environment and health; a systematic funding scheme should be developed.
- Economic arguments and health costs are not used for setting priorities; the systematic use of integrated economic analysis would be beneficial.
- Knowledge about environmental risks to health has to be improved, not only among civil society but also among physicians.
- A wide range of institutions monitors environmental determinants of health without any clear coordination; the monitoring methods should be streamlined.
- An adequate national system needs to be developed and implemented to monitor the effects of implementing environment and health policy.
- Information systems, including ENHIS at the regional level, should be used to strengthen environment and health; reliable data are needed.
- Knowledge of and the methods for health impact assessment should be improved; given the emphasis on health impact assessment in the new Public Health Act, current procedures do not seem to be developed enough.
- The lack of effective communication with civil society must be addressed: the right stipulated in the Constitution to timely access to full information on the state of the



environment and the causes and consequences of its condition does not seem to have been realized.

- Opinions differ on the relevance and effectiveness of the NEHAP.
- The Public Health Act defines environment based on the approach of WHO.

### **Summary information on the regional priority goals in the report**

#### Regional priority goal 1: Water and sanitation

Clean water is one of the main environment and health issues in Slovakia, in terms of both environmental risks to health and policy efforts undertaken. Water supply has been improved considerably in recent decades, both in urban and rural areas.

Drinking-water quality has been substantially improved, contributing to a decline in the number of waterborne disease outbreaks. Nevertheless, the houses of more than half the rural population are not connected to sanitation or wastewater facilities.

Many sectors are involved in water safety, and the financial support provided indicates the importance. Under the NEHAP, management of water safety is allocated to different ministries. The Ministry of Labour, Social Affairs and Family is responsible for providing drinking-water to the Roma population, while the Ministry of Education works to raise awareness of drinking-water quality and the need for a drinking-water regimen in schools. Fifty per cent of the EU structural funds available for environmental projects in Slovakia are invested in the national water sector.

Many institutions perform surveillance, an essential tool in controlling waterborne diseases, depending on the type of water. Monitoring procedures need to be harmonized and access to data centralized.

In conclusion, substantial effort has been put into developing water and sanitation strategies, but greater public awareness of the risks of water quality is still needed.

#### Regional priority goal 2: Injuries and physical activity

Injuries and poisoning are the third leading cause of death in Slovakia. The mortality rates resulting from road traffic injuries and unintentional injuries among children and young people are consistent with the WHO European Region averages but remain unacceptably high. However, Slovakia is one of a group of countries in the WHO European Region that show a high level of commitment to preventing injuries in their policies.

The Ministry of Transport, Posts and Telecommunications is mainly responsible for preventing road traffic injuries, but efforts are being made to involve other sectors. The programme of the Road Safety Council follows a multisectoral approach with shared responsibility; under the current NEHAP, the Ministry of Education is also strengthening education on road safety. The prevention of road traffic injuries is also a core activity for national NGOs. The Ministry of Economy is responsible for preventing unintentional injuries related to product safety issues.

Although efforts have been made in preventing unintentional injuries, there is still no central registry for children's accidents, and the various services collecting data appear to have little or no coordination.

### Regional priority goal 3: Air quality

The review has shown that air pollution is one of the major environment and health issues in Slovakia, together with water safety and unintentional injuries. Respiratory diseases are the fourth leading cause of death and particularly affect children. Slovakia has high exposure to environmental tobacco smoke and PM<sub>10</sub> but is strengthening its policies to reduce the exposure of children to environmental tobacco smoke. The current NEHAP focuses on preventing children from smoking.

In summary, at the national level, air quality management is focused on complying with EU directives, but no system has been put in place to assess the population's exposure to air pollution or to evaluate how this affects health. There is no long-term plan to reduce exposure, and the sectors still do not have a coordinated approach. This is also reflected in an overlapping of the monitoring of air quality by the Ministry of Environment and the Ministry of Transport, Posts and Telecommunications.

### Regional priority goal 4: Chemical, biological and physical agents and occupational health

Other environmental hazards to public health are associated mainly with changing behaviour, institutional infrastructure and the socioeconomic situation, including chemicals, especially in food, and children and young people at work.

National legislation largely recognizes occupational health (such as the Constitution, the Public Health Act and the National Health Programme). The second NEHAP also stressed occupational health as a national priority. The Department of Preventive Occupational Hygiene of the Public Health Authority deals with safety in the working environment in accordance with Public Health Act No. 355/2007 (replacing No. 126/2006). It provides an overview of workers in hazardous environments.

Regarding food contamination and chemicals, data show that children in Slovakia are exposed to a relatively high concentration of dioxins in human milk. As mentioned in the report, the following clarifying information was received after the review was carried out: exposure to high concentrations of dioxins does not affect the entire population. The results mentioned above might come from local case studies mainly from the eastern part of the country. However, data are not adequate to provide a clearer picture.

Analysis of the policy response on food safety shows a large variety of data collected under the responsibility of multiple sectors; however, major policy response efforts are undertaken only if contamination is detected.

Following the Fourth Ministerial Conference on Environment and Health in Budapest in June 2004, and the commitments made by Member States to reduce children's exposure to environmental hazards, countries are seeking support in implementation. WHO/Euro has initiated a project to provide the evidence base for developing and implementing such actions through detailed Environment and Health Performance Reviews (EHPRs).

The EHPRs are country-based interdisciplinary assessments that WHO/Europe carries out at the request of Member States. Through the EHPRs, Member States receive support in the reform and upgrade of the overall public health system. They identify the most important environment and health problems, evaluate the public health impact of environmental exposures and review the policy and institutional framework taking into account the institutional set-up, the policy setting and legal framework, the degree and structural functioning of intersectoral collaboration and the available tools for action.

Based on this analysis, as an integral part of the planning and management of environment and health services the EHPRs provide guidance for strengthening environment and health policy making and for planning preventive interventions, service delivery and surveillance in the field of environment and health.

The present report summarises the principal features and priorities of the EHPRs for Estonia, Lithuania, Malta, Poland, Serbia and Slovakia, providing an outline assessment of key similarities and differences as revealed in the six national reports.

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