

# Health and Environment Primer



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## The Health Environment Alliance

The Health and Environment Alliance, formerly EPHA Environment Network (EEN) is an international not-for profit, non-governmental organisation that aims to raise awareness of how environmental protection improves health by creating opportunities for better representation of citizens' and health experts' perspectives in the environment and health-related European policy-making.

Set up in 2003, HEAL membership now includes a diverse network of more than 50 citizens', patients', women's, health professionals' and environmental organisations across Europe and has a strong track record in increasing public and expert engagement in both EU debates and the decision-making process. HEAL's underlying vision is that of a healthy planet for healthy people.

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## PURPOSE OF THIS BOOKLET

The objective of the Health and Environment Primer is to provide an introduction to European environmental health policy. The booklet sketches out basic environmental health concepts and maps out recent developments in the environment and health arena. In this Primer we present European policy developments in an accessible and approachable text that combines history with information about relevant organisations and web-page references. We aim to create a resource to which people can refer to find out about the important environment and health issues, and in which people can find out where to go to get involved on the issues.

Within the context of the WHO Budapest Ministerial Declaration on Environment and Health in June 2004, the follow-up Inter-governmental review held in 2007, and the new European Commission Action Plan on Environment and Health 2004-2010, this guide consolidates major policy developments with an eye to positively moving forward into the next five-year policy cycle.

This booklet is aimed at policy-makers in the health and environmental sectors, including politicians, NGOs, academics, local authorities, women's and youth groups, and those working in the health sector, including health ministries, hospitals and health care centres, and health professionals and carers, patient and European citizen's groups. Whilst this booklet is primarily intended for those working on environment and health issues, we hope that it proves a useful resource for anyone interested in putting health at the centre of environmental policy.

HEAL is solely responsible for any omissions and mistakes. We encourage our readers to contact us so that we can correct any errors and update our on-line edition at <http://www.env-health.org>.

We hope you find this a helpful resource

# PREFACE

Everyday interaction with the physical environment affects human health and well being. As environments deteriorate, so does the physical and mental health of the people who live in them. Although people are living longer, they are not always living healthier lives. Increasingly, the pollution of the air we breathe, the water we drink, and the soil that produces our food is having a detrimental impact on our health.

Since the beginning of the 19<sup>th</sup> century our understanding of the complex interrelationship that exists between human health and the environment has grown considerably. Cholera and typhoid fever have virtually disappeared in industrialised countries as a result of environmental regulation aimed at creating hygienic and sanitary urban environments with clean water supplies, waste disposal and effluence removal and drainage and the regulation of industrial pollution. Air quality standards have also dramatically improved following the introduction of legislation aimed at curbing severe smog episodes, such as occurred in London in 1952. However, despite past improvements, the burden of environment-related diseases remains significant.

Europeans citizen are still exposed to a variety of environmental contaminants: outdoor air pollution in the form of particulate matter (PM), environmental tobacco smoke (ETS) and ozone, noise pollution, mercury levels observed in concentrations known to have neurodevelopmental effects, an increasing number of man-made chemicals that combine in a chemical cocktail in our bodies, and electromagnetic radiation (EMF). Added to these are the health effects of climate change, which are already causing major public health disasters for Europe.

To address these issues, we must identify the linkages between environmental hazards and health, and develop appropriate policies that protect both human health and the environment. Critical to this process will be our ability to build coalitions between doctors, nurses, public health professionals, policy-makers, NGOs and the general public.

New information about environmental health surfaces on a daily basis. The Health and Environment Primer represents HEAL's first effort to gather and present a comprehensive review of current developments in the health and environment arena. Over the course of several years, this primer has been steadily improved, drawing upon knowledge from many disciplines.

Securing the health of the natural environment is critical for human health and future generations. Our hope is that the primer will provide policy-makers, NGOs, scientists, health professionals, and members of the general public with a useful information source that will contribute to the development of broad multi-sectoral discussions on how best to improve the environment in ways that benefit human health.



Génon K. Jensen  
HEAL Executive Director

## EXECUTIVE SUMMARY

Complex interconnections exist between humans and the environment. Human health is both positively and negatively affected by the environment, with hazardous chemicals, pathogenic bacteria, and air pollution having a detrimental impact on our wellbeing. However, despite the close interrelation between health and the environment, the field of environmental health has only recently developed.

In essence, the European Environment and Health Process was initiated by the World Health Organization Regional Office for Europe (WHO/EURO) in 1989, with the first Ministerial Conference on Environment and Health held in Frankfurt. Since then, Europe has seen a number of significant developments in the field, with the advent of National Environment and Health Plan Europe (NEHAPS), Children's Environment and Health Action Plan Europe (CEHAPE), and the adoption of the EU Environment and Health Action Plan.

This booklet provides an overview of the progress made within this relatively new and multidisciplinary field. Our aim is to illustrate how different environmental policies can affect health, and introduce the EU legislation that has been developed or is being developed for prevention. We begin by setting the context within which this discipline has developed, outlining the political history of public health, environmental health, and environment and health policy within the European Union.

The primer then introduces readers to various policy sectors relating to environment and health, including: air pollution, water quality, chemicals, pesticides, mercury, climate change, urban environment, noise and transport, and horizontal issues such as environmental integration and the Aarhus convention. Overall, policy chapters are structured so as to answer the following questions:

1. How is health affected by this policy?
2. How does the EU address this policy sector?
3. How are international organisations involved in this policy sector?
4. Which international instruments contribute to this policy sector?

We conclude this booklet with a brief overview of the key actors working on environmental health issues: the UN organisations, the EU and its institutions, non-governmental organisations (NGOs), and a list of useful resources that would enable interested parties to become more involved in the environment and health process.

The environment and health area is extremely broad and dynamic. New pollutants give rise to new health concerns and existing pollutants are recognised as more serious than first presumed, entailing subsequent changes or amendments to strategies and legislation. Given this context we have developed the booklet primarily as an online tool, which can be regularly updated, and which provides links throughout the text to the most up-to-date information available.

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# 1. PUTTING HEALTH AT THE HEART OF ENVIRONMENTAL POLICY

## 1.1. INTRODUCTION

Much has been done over the past 30 years to improve Europe's environment, especially with regard to air pollution. Ozone depleting chlorofluorocarbons (CFCs) from spray cans have been phased out. The introduction of catalytic converters has reduced nitrogen oxide emission from road transport by 90% compared to what they would have been. Lead, a dangerous pollutant that affects mental development in children, has been eliminated from petrol in many EU countries. Most recently, many EU member states have introduced smoking bans in public places, reducing exposure to second smoke environmental tobacco smoke (ETS), which contains close to 4000 chemicals, some of which are known carcinogens.

However, major challenges remain. Europe is seeing increasing rates of asthma and allergies, some cancers including childhood cancer, birth defects, endocrine-disrupting disorders and neurodevelopmental disorders. As a result, there is growing concern about the effect of the environment on human health. Four out of every five European citizens (89%) are concerned about the impact of the environment on their health, and over half (56.9%) believe that public authorities do not act effectively to protect them from environment-linked health risks. These concerns are putting pressure on researchers and policy-makers to develop preventative and protective strategies.

The environment in which we live greatly affects our health. Outdoor environments, the household, and workplace can pose a variety of hazards. Whilst estimates of the burden of disease attributable to environmental factors vary between different studies, the WHO estimates that environmental factors play a role in over 80 diseases and injuries.<sup>1</sup> Recognised health effects include cancer, allergies and asthma, respiratory disease, neurological effects, cardiovascular disease and different reproductive and developmental disorders. A number of potential new health threats can be added to this list, such as nanoparticles and nanotechnologies, electromagnetic fields (EMF) and the effects of climate change.

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<sup>1</sup> [http://www.who.int/quantifying\\_ehimpacts/publications/preventingdisease.pdf](http://www.who.int/quantifying_ehimpacts/publications/preventingdisease.pdf)

A growing body of evidence now links environmental pollutants resulting from environmental changes over the last several decades to the rising disease burden in Europe. For some diseases the causal pathway that links the environment to human health effects is clear. For example, exposure to asbestos is the main cause of mesothelioma, a cancer of the internal lining of human organs, and contaminated water is a known cause of diarrhoeal diseases. However, in many cases, such as a possible link between air pollution and child leukaemia, it is difficult to pinpoint cause-and-effect relationships.

Furthermore, the health consequences of environmental exposures depend not only on the pollutants being considered, but on the influences of factors such as genetic constitution, age, nutrition and lifestyle, and socioeconomic factors such as poverty and education. Vulnerability and exposure vary markedly between different groups and geographical regions, with children and the elderly being particularly at risk, and therefore requiring special protection.

Fortunately however many health risks are avoidable. By better connecting environmental pollution and human health, we can help to redefine priorities, increase research and knowledge, and ultimately drive preventive policies aimed at reducing harm to human health, as well as to the environment.

To do so requires, in the first instance, an understanding of the complexity of the problem. Identifying relationships, together with the effect of combined exposures from multiple sources and the timing of exposure, will contribute to a greater understanding of how humans are affected. Co-ordinated action is also key. Environmental health threats are not restricted by geographical borders. Therefore, information-sharing and pooling knowledge are central to effective policy-making and stakeholder participation in the decision-making process. Finally, public awareness of environmental health issues must be raised. Only through ongoing education, contact, coordination and cooperation amongst stakeholders can fundamental environmental health goals be attained.

*Text Box 8.1.1 Facts about health in the European Union*

**SOME WORRYING FACTS AND FIGURES ABOUT OUR HEALTH**

- People in Europe spend 85-90% of their time indoors. Up to 20% of Europeans suffer from asthma due to substances inhaled in indoor environments.
- Long-term exposure to air pollution in large European cities is estimated to cause around 60,000 deaths per year. Worldwide, it has been estimated that 3 million people die prematurely because of air pollution.
- Some 10 million people in Europe are exposed to environmental noise levels that can result in hearing loss.
- For children aged 0–14 years in the European Region, poor water, sanitation and hygiene is estimated to be responsible for 5.3% of all deaths.
- In Europe, one in four children is allergic, with asthma affecting one child in seven. Overall, allergies have increased dramatically over the past 30 years.
- In Europe, more than one child in 10,000 develops cancer, (138 cases per million per year). UV and ionising radiation, tobacco, parental alcohol consumption, industrial and agricultural chemicals have been associated with certain types of childhood cancer.
- In Europe the incidence of breast cancer is increasing by 1-2% each year and is affecting more women in younger age groups.
- Occupational exposure to certain pesticides has been linked to Parkinson's disease (or Parkinsonism).<sup>3</sup>
- Between three and 15 million people in Europe are exposed to mercury levels around or above the recommended limit. Mercury can have serious adverse effects on the developing nervous system and has been linked to harmful effects on the cardiovascular, immune and reproductive systems.<sup>4</sup>
- In certain populations in Europe, up to 10% of infants develop physical or mental disabilities associated with exposure to lead, mercury or PCBs.<sup>1</sup>

References:

1 - European Commission. European Environment and Health Strategy Facts and Figures

[http://europa.eu.int/comm/environment/health/pdf/facts\\_and\\_figures.pdf](http://europa.eu.int/comm/environment/health/pdf/facts_and_figures.pdf)

2 - European Parliament, Report on breast cancer in the European Union (2002/2279(INI)), Committee on Women's Rights and Equal,

<http://www.europarl.europa.eu/omk/sipade3?PUBREF=-//EP//NONSGML+REPORT+A5-2003->

[0159+0+DOC+PDF+V0//EN&L=EN&LEVEL=2&NAV=S&LSTDOC=Y](http://www.europarl.europa.eu/omk/sipade3?PUBREF=-//EP//NONSGML+REPORT+A5-2003-0159+0+DOC+PDF+V0//EN&L=EN&LEVEL=2&NAV=S&LSTDOC=Y)

3 – Collaborative on Health and Environment (CHE), Parkinson's Disease and the Environment Fact sheet

[http://www.healthandenvironment.org/parkinsons\\_disease](http://www.healthandenvironment.org/parkinsons_disease)

4 - Communication from the Commission to the Council and the European Parliament on Community Strategy Concerning Mercury

EXTENDED IMPACT ASSESSMENT - [http://ec.europa.eu/environment/chemicals/mercury/pdf/extended\\_impact\\_assessment.pdf](http://ec.europa.eu/environment/chemicals/mercury/pdf/extended_impact_assessment.pdf)

## 1) Defining environmental health

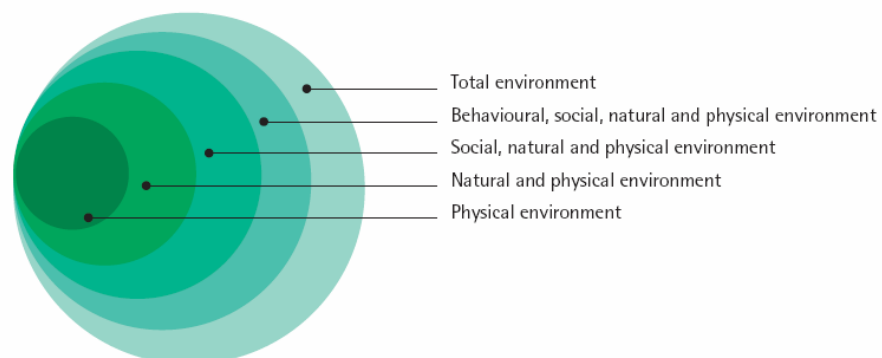
At the first Pan-European meeting of environment and health ministers held in Frankfurt-am-Main in 1989, the resulting European Charter and Commentary identified environmental health as comprising:

"those aspects of human health and disease that are determined by factors in the environment ...both the direct pathological effects of chemicals, radiation and some biological agents, and the effects (often indirect) on health and wellbeing of the broad physical, psychological, social and aesthetic environment which includes housing, urban development, land use and transport. It also refers to the theory and practice of assessing and controlling factors in the environment that can potentially affect health."

The World Health Organisation's definition of environmental health is even more comprehensive, and states that environmental health also comprises the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that can potentially affect adversely the health of present and future generations<sup>2</sup>.

Figure 8.1.1 shows a representation of the definition of the environment that ranges from the most inclusive to the most restrictive. This Primer focuses on the effect of the natural and physical environment on health, in the diagram below, the two inner circles.

Figure 8.1.1 Definition of the environment<sup>3</sup>



<sup>2</sup> World Health Organization. Protection of the Human Environment <http://www.who.int/phe/en/>

<sup>3</sup> [http://www.who.int/quantifying\\_ehimpacts/publications/preventingdisease.pdf](http://www.who.int/quantifying_ehimpacts/publications/preventingdisease.pdf)

## 2) Counting the costs

A recent estimation of the proportion of global ill health attributable to environmental factors (environmental burden of disease) puts the rate at 25-33%, with the figure for established market economies of the order of 15%<sup>4</sup>. To give only a rough indication of what this means in terms of economic costs, if one takes total health expenditure in Europe<sup>5</sup>, and multiplies it by the proportion of ill health attributable to environmental factors of 15%, the expenditure on the medical care and treatment of environment-related disease amounts to around 2-3% of GDP.

In addition to health expenditure is the cost to society in lost productivity over the lifetime of the affected individual. This is particularly significant for child health problems, where disease can make the difference between a productive lifetime and a lifetime of remedial medication. Moreover, health expenditure costs and losses in productivity are only part of the picture, and do not fully reflect the social preference for good health<sup>6</sup>.

Listed below are a few of the health costs associated with some of the key environmental risk factors:

- The societal cost of asthma has been estimated at EUR 3 billion/year.<sup>1</sup>
- The EU Extended Impact Assessment states that anywhere from 3 to 15 million people in Europe have mercury levels around the recommended limit and a percentage have levels ten times as high, at which there are clear neurodevelopmental effects. Although the EU assessment does not calculate the costs of such contamination, a similar US study estimates that between 300,000-600,000 babies born each year suffer from intelligence loss due directly to methyl mercury exposure, which costs an estimated \$8.7 billion a year in lost earnings to the economy.<sup>i</sup>
- The World Health Organisation estimates that road traffic injuries involving adults and children in the EU cost 180 billion euro per year, equivalent to 2% of the GDP. (Preventing road traffic injury: a public health perspective for Europe, prepared by the WHO Regional Office for Europe, available at <http://www.euro.who.int/document/E82659.pdf>).

<sup>4</sup> Smith, K. et al. (1999) How much global ill health is attributable to environmental factors? *Epidemiology*, pp 573-584.

<sup>5</sup> Figures taken from OECD database on health expenditure.

<sup>6</sup> COMMISSION STAFF WORKING DOCUMENT Communication From The Commission To The Council, The European Parliament, The European Economic And Social Committee "The European Environment & Health Action Plan 2004-2010" *EXTENDED IMPACT ASSESSMENT* COM(2004) 416 final Brussels, 9.6.2004 SEC(2004) 729

- It has been estimated that up to 80% of cancers may be attributed to the particular environment in which an individual is living. The cost of one case of cancer per year per patient is €2.14 million.<sup>7</sup>
- New research shows that foetal and early childhood exposure to low doses of neurotoxic industrial chemicals can damage the developing brain and lead to neuro-developmental disorders like learning disabilities, attention deficit disorders, mental retardation and loss of IQ points. There has been an increase in such diseases and one in every six children has developmental brain damage. The current recognized cost of a loss of one IQ point is estimated at around \$85,303 as estimated by US EPA with a total cost of neurobehavioral disorders being \$9.2 Billion.<sup>8</sup>

Investments in public health and environmental protection can significantly reduce health care costs. For example, the phasing out of leaded gasoline is thought to have had significant economic benefits from increased productivity as a result of reduced effects on cognitive function. On the other hand, health policy that excludes environmental problems is likely to incur expenditures that are even higher than projected estimates. This is because the costs of failing to act are less tangible, less clearly distributed and usually longer term and therefore more difficult to estimate than the tangible the costs of preventive actions, which are clearly allocated and often short term.

It is evident that preventive measures to reduce environmental health effects can have marked economic benefits. The cost debate must therefore be broadened to ensure environmental determinants of health receive attention as potential complements to conventional cost control policies. The creation of a health-driven EU vision based on primary prevention will not only lead to benefits for people's health but also ensure greater environmental protection and generate marked economic gains.

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<sup>7</sup> From European Trade Union Confederation presentation Impact on Occupational Health: ETUC IA study, Simon Pickvance, University of Sheffield, Based on RPA study, from A programme for Sustainable Development for the European Union, European Environment Bureau (EEB), (2006) [[http://www.eeb.org/activities/sustainable\\_development/G10-on-SDS-March2006.pdf](http://www.eeb.org/activities/sustainable_development/G10-on-SDS-March2006.pdf)]

<sup>8</sup> Grandjean, P., Landrigan PJ. (2006), "Developmental neurotoxicity of industrial chemicals" The Lancet (368)

### 3) Precautionary health and environmental policy

Rooted in the European Charter on Environment and Health is the idea that public policy should be based first and foremost on prevention. As a result of the complex interlinkages between environment and health it is often not possible to predict or identify the advance consequences of an action. Adverse health outcomes are often non-specific and multifactorial in origin, which means that determining causation is difficult. In complex systems uncertainties limit understanding of cause and effect relationships. Decision-makers therefore need to act in advance of scientific certainty to protect the environment and health of individuals. What is needed is a precautionary approach that asks how much harm can be avoided rather than how much is acceptable.

EU citizens have never lived so long. However, there remains a significant level of preventable morbidity and early mortality linked to non communicable diseases and conditions that could be tackled through effective prevention strategies. Changes in public policy, as well as changes in personal behaviour and lifestyles, could effectively prevent many diseases and conditions.

The Health and Environment Alliance strongly supports preventive policies and favours anticipatory action in order to prevent harm to public health and the environment.

Preventive environmental protection, in its widest sense, provides the best framework for health protection, in addition to providing the greatest economic benefits. Greater priority should therefore be given to ensuring the safety of what we eat, the water we drink, and the air we breathe. The task for the near future is to establish processes by which health implications can be considered and taken into account in all policies, with the needs of vulnerable groups like children given special recognition.



## 2. BACKGROUND

### 2.1. A BRIEF HISTORY OF PUBLIC HEALTH

Public health, an interdisciplinary community effort aimed at protecting, promoting and restoring people's health, is in many ways a modern concept. Whilst human civilisation recognised early on that proper waste disposal and avoiding polluted water could help to prevent the spread of vector-borne diseases, it was not until the 1880s, when the study of infectious disease was revolutionized by Robert Koch's germ theory and Louis Pasteur's production of artificial vaccines that the modern era of public health began.

The first evidence of a public health effort dates back to Ancient Greece, when it was believed that the human body had five basic fluids whose mix was determined in part by the environment. At that time, it was thought that people should be matched to their environment, and it was recommended that people avoid climatic extremes. The idea that people's health could be affected by the environment was later adopted by the Romans. However, instead of advocating that people find the "right" environment, they believed that the environment should be "fixed".

The European plague in the fourteenth century, known as the Black Death, and the appearance of syphilis in the late fifteenth and early sixteenth centuries led to the establishment of a standard set of procedures to avoid the propagation of disease, such as quarantines and *cordons sanitaires*. Whilst these efforts certainly helped to mitigate the effects of infectious diseases, they nevertheless remained piecemeal and ad hoc in nature, based upon the little available knowledge on the cause and spread of diseases.

It was only in 1874, when John Snow identified a polluted water-well as the source of a cholera outbreak in London, and subsequently founded the study of epidemiology, that permanent, national health departments were established. Following this, germ theory, which proposes that micro-organisms are the primary cause of many diseases, became the focus of public health efforts. This was followed, in the 20th Century, by the driving concept of immunisation.

Overall, early responses to public health problems can be characterised by two competing ideas regarding the spread of disease: the “Contagion theory”, which held that disease spread through contact with infected people and goods; and the “Miasma theory”, which held that disease circulated as a result of insalubrious environmental conditions. The Contagion theory was eventually replaced by the germ theory, but it too was thought to be mutually exclusive to the Miasma theory. Thus, when the former became prevalent in the early 20th Century, the Greek idea that the environment had a prominent role to play in health was largely sidelined.

However, during the nineteenth and twentieth centuries it gradually became apparent that various environmental factors, such as unsatisfactory water supplies, sanitation, working conditions, housing, food, and air quality, were major contributors to disease and shortened life spans. This recognition produced many of the great advances in public health.

It has now become accepted that the “Germ theory” is an incomplete theory of disease. Whilst most people accept the mechanics of germ theory, other factors such as lifestyle, socioeconomic status and heredity, are now recognised as having an equally important role to play in human health. Since the 1980s, the close link between human health and well-being, and physical, chemical, biological, social, and psychosocial factors in the environment, has been formally recognised in political arenas.<sup>9</sup>

### 2.1.1. Introduction of Environmental Health to the Political Agenda

Environmental threats that impact on human health range from air, soil and water pollution to accidents and weather pattern changes. Whilst human-induced changes to the environment have attempted to harness the environment for human benefit, many of the activities have reduced the quantity and quality of our environmental resources, and have had a detrimental impact on human health.

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<sup>9</sup> Evolution of Public Health Security, Global Public Health Security, World Health Report 2007, World Health Organisation (WHO) [Available at: [http://www.who.int/whr/2007/07\\_chap1\\_en.pdf](http://www.who.int/whr/2007/07_chap1_en.pdf)]

The gradual process by which environmental health was introduced to the political agenda began in 1972, with the Stockholm Conference on the Human Environment. This meeting, which gathered members from 113 countries, ushered in a new environmental era. Its aim was: “to inspire and guide the peoples of the world in the preservation and enhancement of the human environment”<sup>10</sup>. The Stockholm conference was followed in 1977 by the Thirtieth World Health Assembly, which introduced the idea of a global health for all strategy (HFA), calling for the attainment of all people of the world of a level of health that permits them to lead a socially and economically productive life. Then in 1983, the World Commission on Environment and Development, known as the Brundtland Commission after its chair Gro Harlem Brundtland, addressed concerns “about the accelerating deterioration of the human environment and natural resources and the consequences of that deterioration for economic and social development.”.

In 1984, the link between human health and the environment was formally recognised, with the adoption of the Health for All (HFA) strategy by Member States of the WHO in the European Region. The HFA strategy defined priority health and environment areas, setting eight environmental health targets. This paved the way for the WHO’s first European Conference of Health and the Environment, which took place in Frankfurt, Germany, in 1989. This conference was the first to bring together both environment and health ministers, and saw the approval the European Charter on Environment and Health<sup>11</sup>. The charter set out a far-reaching framework for action for all levels of government, by all sectors of society and at the international level.

This was followed, in 1993, by the endorsement of a far-reaching global strategy for health and environment by the World Health Assembly. The strategy established a unifying framework for WHO work plans and the activities needed to achieve, at global, regional and country levels, the objectives of which are defined in Agenda 21.

Today, the goal of the environment and health process is to manage the environmental factors that influence our health. It can be summarised as the “development and maintenance of an environment capable of sustaining the whole population”<sup>12</sup>.

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<sup>10</sup> United Nations Environment Programme, Declaration of the United Nations Conference on the Human Environment; Available at: <http://www.unep.org/Documents.multilingual/Default.asp?DocumentID=97&ArticleID=1503>

<sup>11</sup> Environmental Health Action Plan for Europe, WORLD HEALTH ORGANIZATION Regional Office for Europe COPENHAGEN. At: <http://www.euro.who.int/document/HEV/ehape.pdf>

<sup>12</sup> Regional Environment Centre for Central and Eastern Europe (2006) Environmental and Health, IV ministerial Conference on Environment and Health, Budapest 2004, Regional Environment Centre, Hungary

## 1) European environment and health policy making

Whilst governments only began cooperating in the area of environment and health in 1989, it is important to note that since 1972, when environmental policy was first mentioned in the European Environmental Action Plan, the EU has passed numerous pieces of legislation that contribute to the protection of human health. These include: standards aimed at improving the quality of water, tackling air and noise pollution, assuring safety of chemicals, setting standards for waste disposal and protecting the EU's native wildlife and plants. It has also taken a leading role in global environmental negotiations, notably in the signing of the Kyoto Protocol on greenhouse gas (GHG) emission reductions. Now, more than 80% of the environmental legislation, much of which impacts on our health, comes from the EU.

The two main bodies involved in European environment and health policy making at the European level are the World Health Organisation and the European Union. WHO sets standards but has no legislative powers. The European Union aims to improve the quality of the environment and protect human health and does have legislative powers affecting environment and health but it is limited in its sphere of competence.

## 2) WHO European Environment and Health Committee (EEHC)

Since the first European Conference on Health and the Environment in 1989, when the environment and health process formally began, environment and health ministers from across the WHO European Region (52 countries stretching from Greenland to the Pacific shores of the Russian Federation with a population of 870 million people) have met every five years to take decisions and assess progress ([http://www.euro.who.int/eehc/conferences/20021010\\_1](http://www.euro.who.int/eehc/conferences/20021010_1)).

The WHO Regional Office for Europe provides the Secretariat for the European Environment and Health Committee (EEHC) (<http://www.who.dk/eprise/main/WHO/progs/EEHC/home>), which gives guidance to Member States on the implementation of their commitments. Their meetings, which take place twice a year, form the planning process for the conferences that take place every five years.

The EEHC is a unique coalition that brings together representatives from:

- Health ministries
- Environment ministries

- Intergovernmental organizations
- Civil-society organizations

Non-member European countries and international organizations may also attend EEHC meetings by special invitation.

### 3) Five-yearly meetings

**Frankfurt-am-Main, 1989** was the first time that ministers of health and ministers of environment met in a common pan-European forum. They endorsed the European Charter on Environment and Health, agreeing on the basic principles, mechanisms and priorities for environment and health programmes and on the setting up of the WHO European Centre for Environment and Health.

**Helsinki, 1994.** Ministers reviewed a comprehensive assessment of the situation in Europe, entitled Concern for Europe's Tomorrow. They adopted the Declaration for Action on Environment and Health in Europe, which initiated the Environmental Health Action Plan for Europe; committed countries to develop national environment and health action plans (NEHAPs); and, established the first European Environment and Health Committee (EEHC).

**London, 1999.** Over 70 ministers of health, environment and transport from 54 countries attended this meeting. They signed the legally binding Protocol on Water and Health, which is attached to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes, as well as the Charter on Transport, Environment and Health and the London Declaration.

**Budapest 2004.** The central theme of the Fourth Ministerial Conference on Health and Environment, held in Budapest in 2004 was 'The future for our children', within the broader context of sustainable development. It was at this conference that the countries of the European region endorsed the Children's Environment and Health Action Plan for Europe (CEHAPE), calling for regional as well as national action to better address the environmental risk factors that most affect the health of European children. They also adopted the Conference Declaration, which included renewed the mandate of the European Environment and Health Committee (EEHC) for a further five years. The Conference also saw the launch of the European Commission's Environment and Health Action Plan, covering the period of 2004-2010

The Intergovernmental Midterm Review (IMR) on the status of implementation of the Budapest Conference Declaration was held on the 13 – 15 June 2007 in Vienna. Recommendations from the IMR were made to the EEHC on its future work as the steering body for health. In September 2007, the EEHC will in turn present its recommendations to the WHO Regional Committee for Europe and to the Committee for Environmental Policy of UNECE.

The Fifth Ministerial Conference will be held in Rome in 2009.

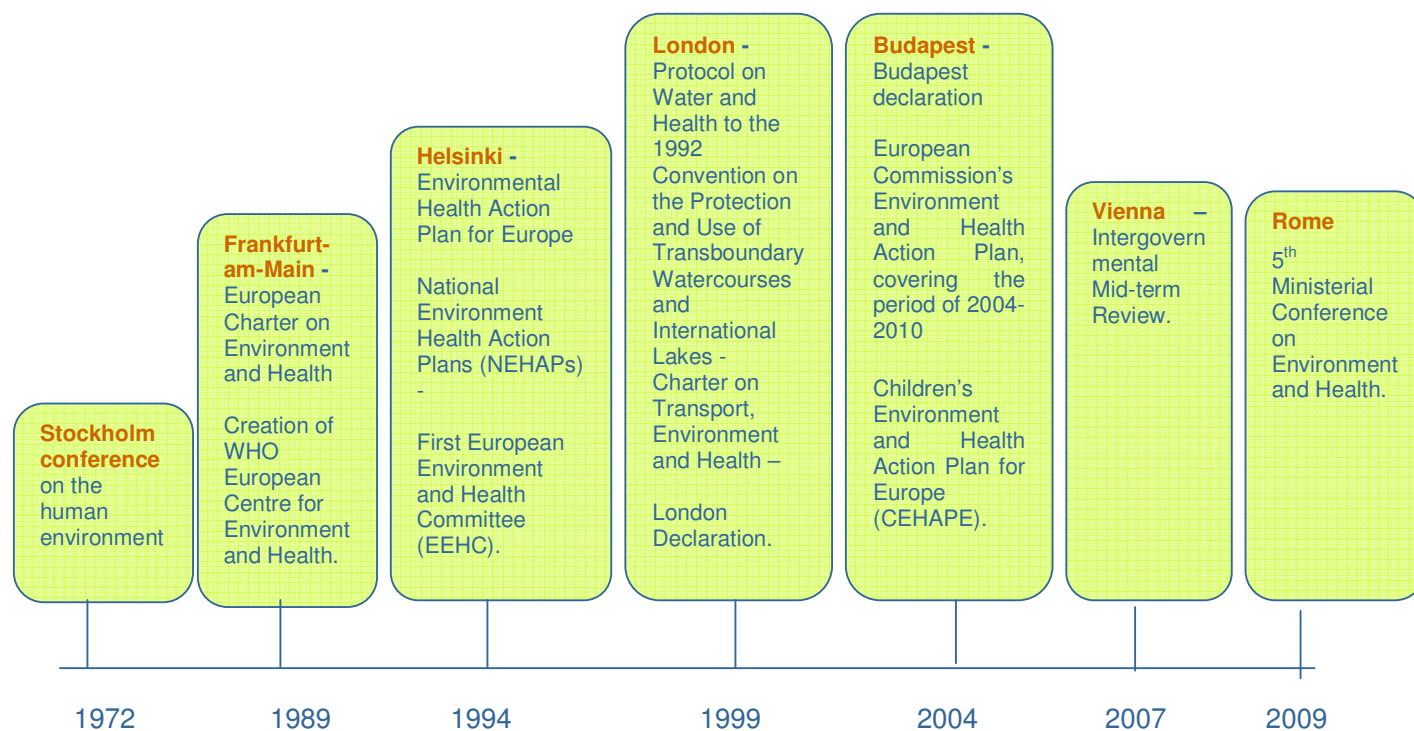


Figure 2.1.1 Key Milestones in Environment and Health

### 2.1.2. National Environment and Health Action Plans (NEHAPS)

At the European Conference of Health and the Environment, held in Helsinki in 1994, the Environmental Health Action Plan Europe (EHAPE) was adopted, and European governments first committed themselves to the development of National Environmental Health Action Plans (NEHAPS). The NEHAP process required the identification of lead agencies, the creation of a steering committee and supporting secretariat, obtaining input and feedback from various stakeholders across several sectors, and the approval of the output by the national governments.

By the time of the third Ministerial Conference on Environment and Health, held in London in 1999, many European countries had completed their NEHAPS. It was at this conference that ministers became more strongly committed to implementation of NEHAPS through local processes, public participation and the improvement of monitoring and risk assessment. The NEHAP implementation phase was launched.

The principal objective of the NEHAPS is to encourage the process of intersectoral consultation and collaboration, and to make recommendations that can be used as a reference framework by environment and health decision-makers. NEHAPS are usually drawn up in cooperation with a wide range of partners, including professional and technical experts, national, regional and local authorities and non-governmental organizations.

Since the first ministerial meetings in Europe, NEHAPs have been adopted in other regions of the world such as the Americas and the Western Pacific. This has led to a greater understanding of the importance of environment and development issues within health ministries, and a greater understanding of the importance of health issues within the environment and other ministries and across sectors.

In terms of policy and planning, NEHAPS overall address the following planning and policy areas:

<b>Environmental health management:</b>	<b>Environmental health hazards and media:</b>	<b>Economic sectors:</b>
Information systems	Ambient air	Industry
Environmental health services	Drinking and bathing water	Agriculture
Public information, consultation and participation	Soil and waste	Transport
Environmental health education	Noise and vibrations	Energy
Economic instruments	Ionising radiation	Tourism
Research agenda	Non-ionising radiation	
	Food safety	
	Housing and human settlements	
	Chemicals	
	Workplace	

Whilst the NEHAP process initiated cooperation between health, environment and other relevant sectors, in many countries a gap between the NEHAP policy process and implementation has emerged. To overcome this, improved cooperation and adequate financial resources are required.

By 2004, at the time of the fifth ministerial conference in Budapest, 46 out of the 52 countries had developed NEHAPs.



Figure 6.1.2.1. **Examples of National Environment and Health Action Plans in Europe**

### Examples of National Environment and Health Action Plans in Europe

#### French National Environment and Health Action Plan 2004 -2008

The French NEHAP was based on a report of experts submitted in 2004, which presented an analysis of the exposure of French citizens to environmental pollution in their daily lives. The NEHAP defines actions needed over the next five years, and will be followed by assessments and further plans.

The French NEHAP includes forty-five actions, twelve of which are defined as priorities, organised under 8 key points. All of them aimed at achieving the three key goals:

- To ensure good drinking water and air quality
- To prevent environmental exposures linked to diseases such as cancer
- To keep the population better informed and protect vulnerable groups (children and pregnant women)

Reference: [http://www.ecologie.gouv.fr/IMG/pdf/PNSE\\_resume\\_eng.pdf](http://www.ecologie.gouv.fr/IMG/pdf/PNSE_resume_eng.pdf)

#### Flemish Environmental Health Action Programme (2002–2006)

The Flemish NEHAP brings together the Federal Authority, Regions and Communities, and the plan has seven overarching aims:

- Establish functional co-operation between the environmental and health structures
- Develop and manage databases for every aspect of environment and health
- Set priorities for research on the relationship between environment and health
- Develop a policy of prevention in the area of environmental health
- Increase communication about the relationship between environment and health
- Support the development of education and training in environmental health
- Raise awareness and education among the public and professionals in both the health and environment fields about the relationship between environment and health

Under the Flemish NEHAP 4,800 participants were included in a biomonitoring programme aimed at collecting data on exposure to selected pollutants including lead, PCBs, hexachlorobenzene and DDE. The purpose of the programme was to establish a measuring network collecting data about exposure to environmental pollutants in the human body, the results of which could then be translated into policy. Blood and urine samples were collected from the participants, who were divided into three age groups: mothers and their newborns, adolescents (14–15 years) and adults (> 50–65 years). The results of the programme revealed several hot posts where inhabitants had relatively high levels of heavy metals, DDE and benzene metabolites.

Reference: [http://reports.eea.europa.eu/state\\_of\\_environment\\_report\\_2007\\_1/en/chapter2.pdf](http://reports.eea.europa.eu/state_of_environment_report_2007_1/en/chapter2.pdf)

### 2.1.3. Children's Environment and Health Action Plan for Europe (CEHAPE)

(<http://www.euro.who.int/eehc>)

It is widely recognised that children suffer a greater burden of disease attributable to environmental factors than adults. The WHO estimates that over 40% of the global burden of disease attributed to environmental factors falls on children under five years of age. Children are susceptible because they are growing rapidly. Their immune, nervous and respiratory systems are developing, and exposure to environmental hazards can detrimentally affect normal development patterns.

“ ... developing organisms, especially during embryonic and foetal periods and early years of life, are often particularly susceptible, and may be more exposed than adults to many environmental factors.”<sup>13</sup>

Consequently, the central question asked at the Fourth Ministerial Conference on Environment and Health, where the theme was “The future of our children”, focused on what to do about the damage done to children’s health by the polluted environment. In an effort to establish inclusive and effective environmental, social, and public health policies the Budapest conference endorsed the Children’s Environment and Health Action Plan for Europe, known as CEHAPE.

The key principals underlying CEHAPE include an emphasis on primary prevention, equity, poverty reduction, health promotion, and the application of measures based upon the precautionary principal. In addition to these principals, CEHAPE includes a series of concrete measures to reduce the impact on children’s health of air pollution, water, chemicals and injuries (accidents), which account for one third of all deaths, diseases and conditions in the group aged 0-19 years. These measures are grouped into four regional priority goals (RPGs):

- RPG I: ensure safe water and adequate sanitation to, inter alia, reduce the morbidity and mortality arising from gastrointestinal disorders and other health effects
- RPG II: ensure protection from injuries and adequate physical activity, by promoting safe, secure and supportive human settlements for all children
- RPG III: ensure clean outdoor and indoor air to prevent and reduce respiratory disease, thereby contributing to a reduction in the frequency of asthmatic attacks

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<sup>13</sup> CEHAPE, Paragraph 4

- RPG IV: aim at chemical-free environments to reduce the risk of disease and disability arising from exposure to hazardous chemicals (such as heavy metals), physical agents (e.g. excessive noise) and biological agents and to hazardous working environments during pregnancy, childhood and adolescence.

As a result of CEHAPE several countries are developing specific children's environment and health plans, whilst others are updating existing NEHAP plans to include child-oriented activities. Post-Budapest, 12 countries had developed Children's Environmental Health Action Plans. By and large the plans include the following: an assessment of environmental health impacts on children, an evaluation of the economic impacts, and the setting of quantitative targets. The CEHAPE Task Force, established in 2005 at the first meeting of the EEHC, aims to provide support to countries in the implementation of CEHAPE. The fifth and most recent meeting of the CEHAPE Task Force took place in Brussels in 2007.

At the 2007 Intergovernmental Mid-term Review (IMR) on progress made in implementing the Budapest Conference Declaration and the CEHAPE, member states reported on the development of children's environmental health action plans, and on the implementation of actions addressing national priorities and goals established at Budapest. A "CEHAPE award" for best practice was also presented to the 15 most "sharing, inspiring, innovative and concrete activities that helped to make a difference in improving children's environmental health" across the 53 countries of the WHO region. The award was divided into five categories, representing the four Regional Priority Goals, plus an additional category on Youth Participation.

For additional information see: [http://www.euro.who.int/childhealthenv/Policy/20020724\\_2](http://www.euro.who.int/childhealthenv/Policy/20020724_2)

*Text Box 6.1.3.1 Case Study - CEHAPE work in Europe***Children's Environment and Health Action Plans Europe****CEHAPE work in Sweden**

Overall Sweden has kept closely to the Regional Priority Goals, although it also relates to the Environmental Quality Objectives and the Swedish Public Health policy. Each section of the Swedish CEHAPE includes subsections on proposals on what needs to be addressed, evidence as to why, and lastly what is already going on. 41 actions are suggested to further improve the situation.

Sweden used its Environmental Health Report to identify issues of particular importance but suggests that those countries without such a resource conduct interviews with relevant stakeholders. Information was also gathered from many different areas such as injuries, transport, food safety, nutrition and physical activity.

The most important aspect of the development of the Swedish CEHAPE are the working groups, each of which focuses on specific subject areas, and each of which has no more than five people. These working groups are asked to provide relevant reports and documents, and to produce proposals for actions, the inclusion of which in the CEHAPE is to be decided upon by the National Board of Health and Welfare. In addition, a reference group, which alongside the workshops, helps make CEHAPE work known throughout Sweden. Finally, there is a steering group.

Overall, the Swedish CEHAPE work is to large extent based upon meetings between people, and creating a forum for discussion between stakeholders.

**CEHAPE work in Austria**

To develop a children's health action plan for Austria, a national task force was established known as CEHAP\_Ö Task Force. This task force involves the following ministries: environment, transport, health, internal affairs, education, labour and interested regions and municipalities, the Austrian chamber of doctors and NGOs such as Doctors for the Environment. A CEHAPE public awareness campaign had been carried out in Austria, and a brochure entitled "A healthy environment for our children", drawn up with the four ministries and the chamber of doctors and doctors' NGO. These brochures will be placed in doctors waiting rooms and sent to the municipalities.

[http://www.euro.who.int/eehc/implementation/20050601\\_2](http://www.euro.who.int/eehc/implementation/20050601_2)

## 2.2. THE EUROPEAN UNION'S ENVIRONMENT AND HEALTH POLICY

Environment and Health are at the heart of all EU policy, as recognised under the EU Treaties in its guiding principles (<http://europa.eu.int/eur-lex/en/treaties>) and in the objectives of Community policy on the environment, which are: “preserving, protecting and improving the quality of the environment, protecting human health, prudent and rational utilisation of natural resources, promoting measures at international level to deal with regional or worldwide environmental problems.”<sup>14</sup>

EU citizens' rights are enshrined in the Charter of Fundamental Rights:

- Article 35 Public Health: A high level of human health protection shall be ensured in the definition and implementation of all Union policies and activities.
- Article 37 Environmental Protection: A high level of environmental protection and the improvement of the quality of the environment must be integrated into the policies of the Union and ensured in accordance with the principles of Sustainable Development.

Underlying much of the political priority given to environmental issues within the EU and the Member States has been concern for human health. It has been one of the primary drivers for policy actions that target water quality (water framework directives), air quality (CAFE — Clean air for Europe), soil quality and chemicals (REACH, persistent organic compounds, endocrine disrupters, and dioxins).

Moreover, the European Union (27 Member States) under its treaties must implement policy, laws and legislation that are sustainable. Sustainable Development can be defined simply as a better quality of life for everyone, now and for generations to come. It is a vision of progress that links economic development, protection of the environment, and social justice ([http://europa.eu.int/comm/sustainable/index\\_en.htm](http://europa.eu.int/comm/sustainable/index_en.htm)). Health is at the centre of sustainable development because human health and quality of life are directly related to economic progress, improvements in the environment and greater social justice.

Below we review the European policy context linking environmental quality and human health, providing a brief overview of the key EU Strategies and Actions Plans to have emerged in this field.

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<sup>14</sup> CONSOLIDATED VERSION OF THE TREATY ESTABLISHING THE EUROPEAN COMMUNITY Official Journal C 325, 24 December 2002. TITLE XIX ENVIRONMENT, Article 174. [http://europa.eu.int/eur-lex/lex/en/treaties/dat/12002E/htm/C\\_2002325EN.003301.html](http://europa.eu.int/eur-lex/lex/en/treaties/dat/12002E/htm/C_2002325EN.003301.html)

### 2.2.1. Sustainable Development Strategy – 2001

The European Union Strategy for Sustainable Development (<http://europa.eu.int/comm/environment/eusds>) has set several long-term objectives and targets related to health. They include addressing potential threats to public health stemming from persistent toxic substances, combating resistance to antibiotics, and reducing food safety risks. The strategy also makes reference to the need to maintain “good quality health services affordable to all citizens.”

Besides these, measures concerning food safety, chemicals, agriculture (including tobacco), worker safety, and infectious diseases have been outlined. For further information: [http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001\\_0264en01.pdf](http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001_0264en01.pdf).

In 2006, the European Council adopted a renewed sustainable development strategy for an enlarged EU (<http://register.consilium.europa.eu/pdf/en/06/st10/st10117.en06.pdf>). This strategy, which builds upon the 2001 Gothenburg strategy and is the result of an extensive review process, identifies and develops a series of actions that will enable the EU to achieve a continual improvement of quality of life for both present and future generations. The seven key priority challenges for the period until 2010 are defined as:

- Climate change and clean energy
- Sustainable transport
- Sustainable production and consumption
- Public health threats
- Better management of natural resources
- Social inclusion, demography and migration
- Fighting global poverty

### 2.2.2. The 6th Environmental Action Plan – EAP - 2002

“Environment and Health and quality of life” was recognised as one of the four priority areas of the Sixth Environmental Action Programme<sup>15</sup>, “Environment 2010: Our Future, Our Choice”. This Programme provides the environmental component of the Community’s strategy for sustainable development and places EU environmental plans in a broad perspective by taking

<sup>15</sup> Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 laying down the Sixth Community Environment Action Programme. OJ L 242 of 10/9/2002. [http://europa.eu.int/comm/environment/newprg/6eap\\_xsum\\_en.pdf](http://europa.eu.int/comm/environment/newprg/6eap_xsum_en.pdf).



into account economic and social conditions. The Action Plan's objective is "to achieve a quality of the environment where the levels of man-made contaminants, including different types of radiation, do not give rise to significant impacts on or risks to human health."

A Mid-term review of the 6<sup>th</sup> EAP was undertaken in 2006 to "evaluate the progress made in its implementation together with associated environmental trends and prospects". Based on a broad consultation with interested parties, it was adopted by the Commission in April 2007, and has since been presented to the European Parliament and Council.

There are two objectives to the 6<sup>th</sup> EAP. Firstly, to make sure that a Community framework for action addressing priority environmental challenges is in place up to 2012. Secondly, to guarantee environmental challenges are addressed in the most effective and efficient way. Overall, the three main policy drivers for the mid-term review are: the current state of the environment; the policy context in which EU environmental policy is to be developed; and, the identification of deeper underlying problems.

Whilst it may be deemed too early to see the results of many of the measures adopted under the 6<sup>th</sup> EAP, overall the impact assessment reveals that the EU is far from reaching its objective of decoupling economic growth from the negative impacts arising from resource use. Deep underlying problems remain that could slow progress towards the EAP objectives. In particular, the Mid-term Review assessment of "Environment, Health and the Quality of Life" highlights outdoor and indoor air pollution, and water and food-borne infections as the greatest threats to human health. The Review draws attention to the insufficient evaluation of the indirect impacts of poor air and water quality on health. It also underlines the poor understanding of the "cocktail" of chemicals currently found in the human body and the lack of research into their effects.

Despite these shortcomings, the mid-term review confirmed that the Programme remains the correct framework for Community action in the area of environment up to 2012.

Documents pertaining to the mid-term review can be found at the following website: <http://ec.europa.eu/environment/newprg/review.htm>

For more information please see: <http://ec.europa.eu/environment/newprg/index.htm>

### 2.2.3. Strategy on Environment and Health - 2003

In an attempt to address the complex nature of environmental health problems, the European Commission launched a Strategy on Environment and Health based upon an integrated approach to the development of policy responses (<http://europa.eu.int/comm/environment/health/>). This programme is better known under the acronym **SCALE**:

<b>S</b> cience	based on science
<b>C</b> hildren	focusing on children
<b>A</b> wareness	that raises awareness
<b>L</b> egal instruments	that uses legal instruments
<b>E</b> valuation	including evaluation

It is an incremental strategy, with the first cycle beginning in 2004 and continuing through 2010, which addresses environment and health issues in an integrated way. The Strategy builds upon the Commission's Sixth Environment Action Programme, and has the aim of addressing the links between poor health and environmental problems.

The strategy objectives are:

- To reduce the burden of disease caused by environmental factors in the EU, with special emphasis on vulnerable groups in society like children.
- To identify and to prevent new health threats caused by environmental factors such as endocrine disrupting effects.
- To strengthen EU capacity for policymaking in this area.

The European Parliament and Council of Ministers welcomed the strategy asking for an Action Plan to be presented in order to better define how the strategy would be implemented ([http://europa.eu.int/prelex/detail\\_dossier\\_real.cfm?CL=en&DosId=183450](http://europa.eu.int/prelex/detail_dossier_real.cfm?CL=en&DosId=183450)).

#### Environment and Health Action Plan - 2004-2010

On the 9th June 2004, the European Commission launched the 2004-2010 Environment Health Action Plan



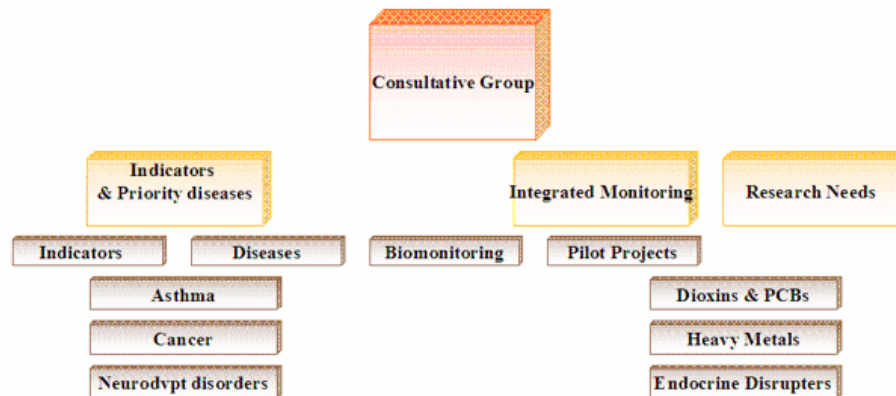
([http://europa.eu.int/prelex/detail\\_dossier\\_real.cfm?CL=en&DosId=191336](http://europa.eu.int/prelex/detail_dossier_real.cfm?CL=en&DosId=191336)), presented at the Budapest Ministerial Conference as the EU input to the WHO environment and health process.

A Commission Task Force, made up of DG Environment, DG Health, DG Research and the Joint Research Centre, set up nine Technical Working Groups (TWGs ([http://europa.eu.int/comm/environment/health/layers\\_workinggroups\\_en.htm](http://europa.eu.int/comm/environment/health/layers_workinggroups_en.htm)) and a Consultative Group on Environment and Health ([http://europa.eu.int/comm/environment/health/pdf/consultative\\_group\\_members.pdf](http://europa.eu.int/comm/environment/health/pdf/consultative_group_members.pdf)), which worked to prepare the « Action Plan 2004-2010 ». The European Commission co-operated closely with Member States, Acceding Countries, European bodies (namely European Environment Agency (EEA) and European Food Safety Authority (EFSA)), networks of Regional and Local Authorities, and a broad community of European-wide stakeholder organisations: Civil society groups, NGOs, including HEAL (then the EPHA Environment Network, known as EEN), research, industry and international organisations (namely World Health Organization). In total about 300 experts took part in this exercise. -

The Technical Working Groups focused on the following areas to be addressed in the Action Plan:

1. Integrated monitoring of dioxins & PCBs
2. Integrated monitoring of heavy metals
3. Integrated monitoring of endocrine disrupters
4. Biomonitoring of children
5. Environment and Health indicators
6. Childhood respiratory diseases, asthma, allergies
7. Neurodevelopmental disorders
8. Childhood cancer
9. Research needs

**Figure 2.2.3-1 Technical Working Groups for the Environment and Health Action Plan - 2004-2010<sup>16</sup>**



More information on the Technical Working Groups can be found here: [http://ec.europa.eu/environment/health/layers\\_workinggroups\\_en.htm#4](http://ec.europa.eu/environment/health/layers_workinggroups_en.htm#4)

The European Commission's goal for the action plan is to better understand and identify health problems related to the environmental degradation, which will allow them to prevent new health threats linked to environmental pollution. The key elements contained in the plan are:

- Improving the information chain to understand the links between sources of pollution and health effects: the Commission is seeking mainly to develop environment and health indicators, further integrate monitoring of the environment and develop a coherent approach to biomonitoring in Europe.
- Filling the knowledge gap by strengthening research and addressing the emerging issues on environment and health: the Commission intends to focus research more on diseases, disorders and exposure, in tandem with the development of methodological systems to analyse interactions between environment and health.
- Reviewing policies and improving communication: the Commission proposes to raise awareness and boost risk communication, training and education so that citizens and experts are given the information they need. This will include a focus on the priority diseases, indoor air quality, and developments regarding electromagnetic fields.

<sup>16</sup> Environment and Health Action Plan - 2004-2010 Technical Working Groups [Available at: [http://ec.europa.eu/environment/health/layers\\_workinggroups\\_en.htm#4](http://ec.europa.eu/environment/health/layers_workinggroups_en.htm#4)]

The EU Dutch Presidency conference in December 2004 ([http://europa.eu.int/comm/environment/health/conf\\_en.htm](http://europa.eu.int/comm/environment/health/conf_en.htm)) provided a forum for provisional conclusions to be drawn up by EU member states. This further specified the development of necessary implementation measures, including: stakeholder participation on integrated monitoring and information systems, health and environment research, human biomonitoring, indoor environment, risk communication and education of professionals.

The European Economic and Social Committee (EESC) (<http://www.esc.eu.int/pages/en/home.asp>) responded in December 2004 to the Action Plan by stating that it 'falls short of presenting a cohesive and comprehensive plan of concrete actions with accompanying timescales'.

The European Parliament responded to the Commission's action plan through a report from Ms. Ries, a Member of the European Parliament (Belgium), which is very critical of the action plan due to its lack of concrete action, unclear financial mechanisms for implementation, and lack of focus on children. The report was voted on in plenary in February 2005 and received support across political parties in the European Parliament.

The European Council has not yet given Council Conclusions on the Commission's Action Plan 2004-2010, although it is expected to provide conclusions on the Mid-Term Review of the Action Plan in December 2007.

The Health and Environment Alliance response to the action plan, which was presented at the EU and Dutch implementation conference which took place in The Netherlands on 2-3 December 2004, was also critical. In particular HEAL expressed disappointment at the Action Plan's failure to take forward many of the concrete and important proposals of the SCALE Technical Working Groups and Consultative Group. The HEAL position paper in response to the Action Plan can be found here:

[http://www.env-health.org/IMG/pdf/EEN\\_response\\_to\\_EU\\_Action\\_Plan\\_final.pdf](http://www.env-health.org/IMG/pdf/EEN_response_to_EU_Action_Plan_final.pdf)

Progress on implementation of the action plan is reported to a consultative forum, which meets once or twice a year ([http://ec.europa.eu/environment/health/consul\\_forum.htm](http://ec.europa.eu/environment/health/consul_forum.htm)). The fourth Consultative Forum was held in 2006.

A mid-term review of the EU's 2004-2010 action plan on health and environment was adopted in June 2007. The review reaffirms the Commission's commitment to the health and environment process and overall paints a positive picture of the progress achieved so far in implementing the action plan's 13 tasks. Whilst it notes that completing the work by 2010 will be "challenging", the overriding conclusions are that EU-wide monitoring systems and assessment strategies relating to environment and health are improving, enabling better information gathering; and that positive developments have occurred since 2004 in the form of the various new initiatives that have been adopted. These include the last of the air quality "daughter" directives, the adoption of a number of proposals by the Commission with a view to banning mercury, and the final adoption of REACH regulation, amongst others (<http://www.endseuropedaily.com/docs/70613b.doc>).

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## 3. POLICY SECTORS

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### 3.1. INDIVIDUAL SECTORS

#### 3.1.1. Outdoor Air Pollution

The effects of air pollution range from mild changes in respiratory function, through increased respiratory and cardiovascular morbidity, to increased mortality. In children, outdoor air pollution is associated with acute lower respiratory tract infections, asthma, low birth weight, and impaired lung function. Overwhelming evidence now shows that small particles (PM10 and PM2.5) are largely responsible for these adverse health impacts and excess deaths.

Air quality is an issue of major concern to European citizens. Since the industrial revolution there has been a significant deterioration in the quality of the air we breathe, mainly as a result of the burning of fossil fuels and the dramatic increase in road traffic.

The European Commission's Impact Assessment estimates that ([http://europa.eu.int/comm/environment/air/cafe/pdf/ia\\_report\\_en050921\\_final.pdf](http://europa.eu.int/comm/environment/air/cafe/pdf/ia_report_en050921_final.pdf)) every year 369,980 people die prematurely because of air pollution. Moreover, premature death, health care and medication due to air pollution amount to between 3% and 9% of the EU GDP.

#### 1) EU Policy Outdoor Air Quality

Since the 1970s the EU has undertaken a variety of actions and introduced legislation to tackle air pollutants such as sulphur dioxide, lead, nitrogen oxides, carbon monoxide and benzene. Most recently, the 6th Environmental Action Programme of 2002 lays down the objectives for a Thematic Air Strategy. These objectives are "contributing to a high level of quality of life and social well being for citizens by providing an environment where the level of pollution does not give rise to harmful effect on human health and the environment" (Art. 2.2). More specifically for air pollution policies the objectives are "achieving levels of air quality that do not give rise to significant negative impacts on and risks to human health and the environment" (Art 7.1). Indeed the mid-term review of the 6EAP confirms the need for further actions to reduce exposure to air pollution.

For more information see: <http://europa.eu.int/comm/environment/air/>

### **Programme on Ambient Air Quality and Cleaner Air for Europe - “CAFE”**

In 2001 the Commission launched a programme of technical analysis for policy development, called Clean Air for Europe that would underpin the Thematic Strategy on Air Pollution, adopted in September 2005.

Support for the Clean Air for Europe was provided by the Joint Research Centre ([http://ies.jrc.cec.eu.int/Action\\_2112\\_-\\_AQH.66.0.html](http://ies.jrc.cec.eu.int/Action_2112_-_AQH.66.0.html)) and programmes like the AIRNET (<http://airnet.iras.uu.nl/>), an EU-wide framework for air pollution & health research to strengthen the science-policy interface and to integrate information from individual projects; APHEIS (<http://www.apheis.net/>), a health impact assessment project; the modelling work of IIASA (<http://www.iiasa.ac.at/rains/>), and the EEA ([http://themes.eea.eu.int/Environmental\\_issues/air\\_quality](http://themes.eea.eu.int/Environmental_issues/air_quality)), which has the role of monitoring and analysing relevant policies.

CAFÉ was made up of three working groups with experts and European stakeholders:

- Working Group on Target Setting and Policy Assessment  
([http://europa.eu.int/comm/environment/air/cafe/working\\_groups/wg\\_target\\_setting.htm](http://europa.eu.int/comm/environment/air/cafe/working_groups/wg_target_setting.htm))
- Working Group on Particulate Matter  
([http://europa.eu.int/comm/environment/air/cafe/working\\_groups/wg\\_particulate\\_matter.htm](http://europa.eu.int/comm/environment/air/cafe/working_groups/wg_particulate_matter.htm))
- Working Group on Implementation  
([http://europa.eu.int/comm/environment/air/cafe/working\\_groups/wg\\_implementation.htm](http://europa.eu.int/comm/environment/air/cafe/working_groups/wg_implementation.htm))

For more information see: [http://europa.eu.int/comm/environment/air/cafe/pdf/cafe\\_dir\\_en.pdf](http://europa.eu.int/comm/environment/air/cafe/pdf/cafe_dir_en.pdf)

## Thematic Strategy on Air Pollution

The Thematic Strategy aims at reducing the main health and ecosystem problems caused by air pollution: health damage through ground-level ozone and particle pollution, and acidification and eutrophication (an increase in chemical nutrients - typically compounds containing nitrogen or phosphorus - in an ecosystem) which damage forests and lakes in particular. It proposes the use of 60% of all technically feasible abatement measures for curbing ground-level ozone pollution, the introduction of 55% of technically feasible measures to cut eutrophication and acidification and 75% of measures for particulate matter (PM) by 2020.

To achieve these objectives, according to the Thematic Strategy, SO<sub>2</sub> emissions will need to decrease by 82%, NO<sub>x</sub> emissions by 60%, VOCs by 51%, ammonia by 27% and primary PM<sub>2.5</sub> by 59% relative to emissions in 2000.

One problem of the Thematic Strategy is that it only sets a non-binding goal to reduce pollution. In order to attain this goal, many future EU laws need to be adopted. However, many concrete proposals to implement all the possible reductions are still lacking and will only be developed in the coming years after consultation with governments and MEPs.

## Revision of the ambient air quality directives

At the same time as the Commission adopted the Thematic Strategy on Air Pollution, a reviewed proposal for the directives on ambient air quality was adopted. The new proposal includes the following key elements, which are currently under negotiation:

- New air quality objectives and monitoring requirements for PM 2.5
- The possibility of discounting natural sources of pollution in compliance assessment
- Absolute time extensions for dates of compliance to existing legislation, particularly for PM<sub>10</sub> limit values
- Existing legislation and separate daughter directives to be merged into a single directive

The Parliament has had its first reading of the Commission's proposal, and the Council has since adopted its common position. For further update on the process see (<http://www.europarl.europa.eu/oeil/file.jsp?id=5287672>)

## National Emission Ceilings - NEC

The Directive on National Emission Ceilings (NECs) will translate the objectives of the Thematic Strategy into legally binding objectives. It sets upper limits for the total emissions, to be met by 2010, for SO<sub>2</sub>, NO<sub>x</sub>, VOCs and ammonia, and is responsible for acidification, eutrophication, particle formation and ground-level ozone pollution. Under the Directive, Member States are obliged to report each year on their national emission inventories to the European Commission and European Environment Agency (EEA), and must also draw up national programmes demonstrating how national emission ceilings will be met. National Programmes were sent to the Commission in 2002, and again at the end of 2006.

With the accession of new Member States, the NECs were amended.

Currently the Commission is preparing a proposal to revise the NEC Directive in the spring of 2008 to set emission ceilings to be respected by 2020 for the four substances already regulated, and possibly also for PM<sub>2.5</sub> emissions, a revision that has already been delayed many years. Lately the Commission proposal has been delayed in order to take account of the new energy projections being developed for the burden-sharing agreement that will implement a pledge by EU leaders to cut greenhouse gas emissions by 20% by 2020, compared with 1990 levels. Whilst this delay will not alter the 2020 deadline, it will reduce the time that member states have to meet the targets.

For more information see: <http://ec.europa.eu/environment/air/ceilings.htm>

## Pollution Emissions and Fuel Quality from Transport

The pollutant emissions from road vehicles are regulated separately for light-duty vehicles (cars and light vans) and for heavy-duty vehicles (trucks and buses). For light-duty vehicles, the emission standard currently in force is Euro IV. New stricter Euro V and Euro VI standards have been agreed by Council and Parliament in 2007 and will enter into force 2009 and 2014 respectively. The legislation currently in force for heavy-duty defines the emission standard currently in force, Euro IV, as well as the next stage (Euro V), which will enter into force in October 2008. In addition, it defines a non-binding standard called Enhanced Environmentally-friendly Vehicle (EEV). A new proposal to set new limit values for heavy-duty vehicles (EURO VI) has been awaited for a long time and might be agreed towards the end of 2007.



The new fuel quality standards proposed by the Commission in 2007 will not only make petrol, diesel and gasoil 'cleaner' but will also allow the introduction of vehicles and machinery that pollute less and have a combined reduction in impact on climate change and air pollution. Biofuels are becoming more and more of a political priority with their effects on biodiversity, climate change and fuel quality all being considered at European level.

There are also emission and fuel standards for the aviation industry, shipping industry and non-road mobile machinery.

For more information see: <http://ec.europa.eu/environment/air/transport.htm>

### **Stationary Source Emissions**

In 2001 the Large Combustion Plants (LCP) Directive came into force. Its aim is to reduce emissions of acidifying pollutants, particles and ozone precursors from large combustion plants whose thermal input is greater than 50 MW.

Plants covered by the LPC directive are also covered by the Integrated Pollution Prevention and Control Directive. This means that the LPC Directive essentially only sets minimum obligations, which may not be sufficient to comply with the IPPC Directive.

For more information see: <http://ec.europa.eu/environment/air/stationary.htm#3>

### **Integrated Pollution Prevention and Control – IPPC**

To address the pollution produced by industrial production processes, the EU established the Integrated Pollution Prevention and Control (IPPC) Directive in 1996. In essence the Directive aims to minimise pollution from various industrial sources throughout the European Union. The Directive is based on four following principles: an integrated approach; Best Available Techniques (BAT); flexibility; and public participation. Overall, about 50 000 installations are covered by the IPPC Directive in the EU.

The deadline for full implementation of the Directive is October 2007, and an IPPC Implementation Action Plan was set up in 2005 to support Member States in implementing the Directive, and to monitor progress made towards meeting the deadline.

A review of the IPPC pollution control legislation Directive is currently under way. The review is based on the outcome of a consultation organised on the basis of the Commission Communication “On the road to Sustainable Production – Progress in implementing Council Directive concerning integrated pollution prevention and control contributions” ([http://ec.europa.eu/environment/ippc/com\\_communication.htm](http://ec.europa.eu/environment/ippc/com_communication.htm)). It is aimed at resolving issues of cross-compliance with other pollution control measures.

For more information see: <http://ec.europa.eu/environment/ippc/index.htm>

## 2) International Organizations

The WHO/Europe programme on air quality (<http://www.euro.who.int/air>) contributes to the ongoing work to protect health from harm caused by air pollution. The WHO Air Quality Guidelines are the international reference on the adverse effects of exposure to different air pollutants on human health. The WHO with the UNECE also run a programme called the pan-European programme on transport, health and environment (THE PEP). The programme looks at three priorities:

- Integration of environmental and health aspects into policies and decisions on transport
- Shift of the demand for transport towards more sustainable mobility; and
- Urban transport.

For more information see <http://www.euro.who.int/transport>

## 3) International Instruments

### Long-range Transboundary Air Pollution (LRTAP)

In 2004 the Convention on Long-range Transboundary Air Pollution (LRTAP) (<http://www.unece.org/env/lrtap/>) celebrated its 25th anniversary. Since 1979 it has addressed some of the major environmental problems of the UNECE region through scientific collaboration and policy negotiation. It has been extended by eight protocols that identify specific measures to be taken by Parties. In addition to laying down the general principles of international cooperation for air pollution abatement, the Convention sets up an institutional framework bringing together research and policy.

### **Protocol to Abate Acidification, Eutrophication and Ground-level Ozone**

The Protocol, signed in 1999, sets emission ceilings for 2010 for four pollutants: SO<sub>2</sub>, NO<sub>x</sub>, VOCs and ammonia. Under the Protocol, Parties whose emissions have the most severe environmental health impacts, and those whose emissions are relatively cheap to reduce will have to make the biggest cuts. It also sets tight limit values for specific emission sources like combustion plants, and requires Best Available Techniques (BATs) to be used in order to keep emissions down. It is estimated that as a result of the Protocol the number of days with excessive ozone levels will be halved, which in turn will mean that life-years lost due to the chronic effects of ozone exposure may be 2,300,00 lower in 2010, than in 1990. Moreover, it is thought that this will lead to approximately 47,500 fewer premature deaths resulting from ozone and particulate matter in air.

### **CEHAPE**

The WHO Children's Environment and Health Action Plan for Europe, signed by the European Commission, together with Environment and Health Ministers throughout Europe, has as its Regional Priority Goal 3: 'to 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'. The second meeting of the European Environment and Health Committee in Copenhagen ([http://www.euro.who.int/Document/EEHC/2ndEEHC\\_Inf.pdf](http://www.euro.who.int/Document/EEHC/2ndEEHC_Inf.pdf)), in June 2005, focused on this goal.

### **3.1.2. Indoor Air Pollution**

Europeans spend, on average, 85-90% of their time indoors at home, in school, at work or during leisure time. While it is generally believed that buildings shelter us from most unpleasant and unhealthy outdoor conditions or pollutants, indoor environments pose their own threats to health and, in some cases, can be at least twice as polluting as outdoor environments. According to the WHO's World Health Report 2002, indoor smoke alone is responsible for 2.7% of the global burden of disease.

Poor indoor air quality is associated with increased rates of asthma, allergies, mucous irritation, headaches and tiredness. Exposure to tobacco smoke, asbestos, radon and benzene released inside buildings are all potential causes of the increase in cancer cases within the European population. However, these health effects are only beginning to be recognized, addressed, and treated. A useful report highlighting all the practical dynamics of indoor air pollution has been produced by the German Federal Environment Ministry: A healthier home – but how? Practical everyday tips. See: <http://www.umweltdaten.de/publikationen/fpdf-l/3085.pdf>

## 1) EU Policy on Indoor Air Pollution

At present there are no directives specifically focused on indoor air pollution in the EU, however, indoor air quality standards are defined in the 1996 Air Quality framework directive, and subsequent directives. The European Commission has adopted limit concentration values for the most common pollutants, such as SO<sub>2</sub>, lead and particulate matter.

As previously mentioned, air quality has been identified as one of the four priority areas in the EU's 6th Environment Action Programme. Specifically, improving indoor air quality is Action 12 in the Environment and Health Action Plan, and was discussed at the 2004 Conference on the European Environment and Health Action Plan 2004-2010, where the following suggestions for the future work were made:

- A European initiative to address indoor air pollution, starting with the improvement of building products (see Construction Products Directive <http://ec.europa.eu/enterprise/construction/internal/cpd/cpd.htm>) and ventilation system development, and harmonisation of testing and labelling for building products (see CEN <http://www.cen.eu/cenorm/businessdomains/businessdomains/environment/index.asp>) to enable people to identify low-emitting products
- Smoking bans and other policies across Europe (<http://www.smokefreeworld.com/europe.shtml>)
- Adequate elimination of combustion products generated indoor.

For further information see: "Background working document prepared for the Conference on 2-3 December 2004 in the Netherlands on the European Environment and Health Action Plan 2004-2010" found at:

[http://europa.eu.int/comm/environment/health/pdf/indoor\\_air.pdf](http://europa.eu.int/comm/environment/health/pdf/indoor_air.pdf)

Following this, at the 2006 Environment and Health Consultative Forum, a proposal was made for an Expert working group on Indoor Air Quality (IAQ). According to the draft mandate the expert group would have the following terms of reference:

- To provide a forum for the exchange of information, good practice and knowledge on the relationship between indoor air quality and health
- To review, comment and advise on elements of EU programmes relating to IAQ
- To provide and interface between relevant projects and activities within countries in relation to IAQ
- To evaluate the evidence of actions (on priority compounds) and to provide guidance and advice on the implementation of the Action Plan with the aim of reducing/lowering (relevant) pollutant emissions/concentrations.
- To examine the links with other Community policies and activities carried out by other European and International institutions and organisations, such as the WHO, EEA etc.

The indoor expert air quality group was convened by DG SANCO, ensure a balanced representation of the different stakeholders and input from across relevant EU policy areas.

For more information see:

[http://ec.europa.eu/environment/health/pdf/forum19\\_04\\_06/indoor\\_air\\_mandate.pdf](http://ec.europa.eu/environment/health/pdf/forum19_04_06/indoor_air_mandate.pdf)

Also see also the Towards Healthy Air in Dwellings in Europe (THADE) project recommendations on Indoor Air Quality that give a clear indication of some of the elements that can be tackled at EU Level. See [http://www.efanet.org/activities/publications\\_allergy.html](http://www.efanet.org/activities/publications_allergy.html)

More recently, in January 2007, the Scientific Committee on Health and Environmental Risks (SCHER) adopted a preliminary report on the risk assessment of indoor air quality, providing the European Commission with a scientific basis for developing indoor air policies. The report covers various environmental factors affecting human health to which the general public may be exposed when indoors, such as particles, microbes, humidity, pets and pests. According to the report there is a need for further research into possible indoor air pollutants. It also recommends health risk assessments in this area be done according to the standard principles of chemical risk assessment and that vulnerable groups such as children and asthma sufferers be addressed on a case by case basis ([http://ec.europa.eu/health/ph\\_risk/committees/04\\_scher/docs/scher\\_o\\_048.pdf](http://ec.europa.eu/health/ph_risk/committees/04_scher/docs/scher_o_048.pdf)).

Finally, of note, the Annex of the Energy Performance of Buildings Directive lists indoor climatic conditions, including outdoor climate as one of the issues that should be taken into account when calculating the energy performance of a building. It is understood that requirements for energy performance cannot be met by decreasing the indoor environmental quality.

## 2) International organisations

The WHO first produced air quality guidelines in 1987, updated in 1997 with a European scope. The guideline values presented refer to the four most common air pollutants: particulate matter, ozone, NO<sub>2</sub> and SO<sub>2</sub>, and explore the special case of indoor air pollution. In 1995 a global update on air quality guidelines was produced, the full edition of which is available on the WHO website ([http://www.who.int/phe/health\\_topics/outdoorair\\_agg/en/index.html](http://www.who.int/phe/health_topics/outdoorair_agg/en/index.html)). This update recommends the WHO develop guidelines for indoor air quality. As a result, the WHO convened a working group which met in Bonn Germany in 2006 to outline the tasks required for indoor air quality guideline development in 2007-2009. The WHO also runs a programme on Housing and Health which addresses: home safety and accidents, indoor air quality and comfort, thermal comfort and energy, pests in homes and cities, the quality of residential environments and physical activity, effects on mental health and the challenge of ageing populations. See <http://www.euro.who.int/Housing>

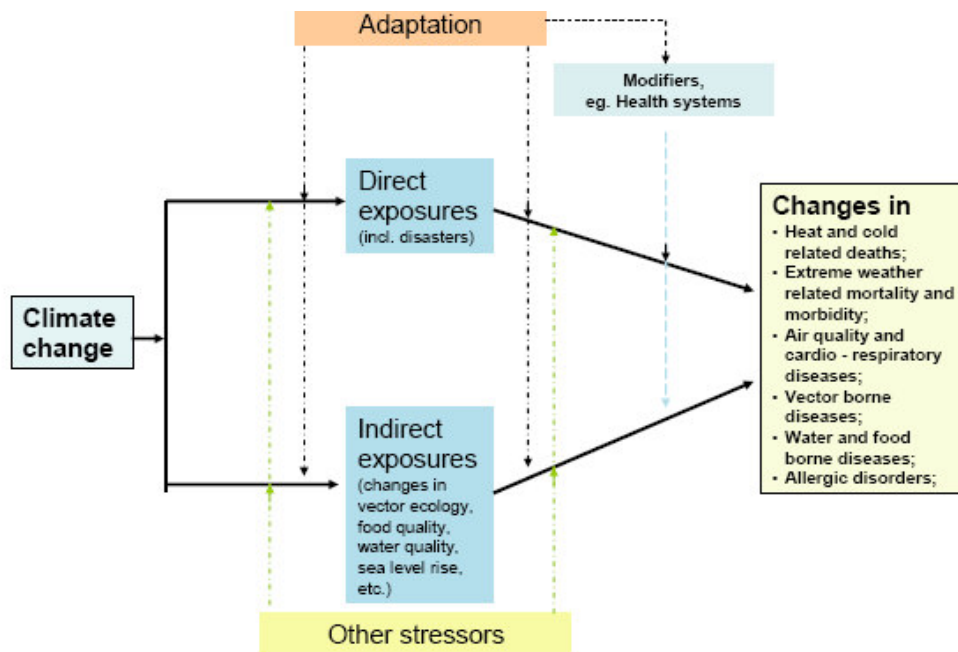
## 3) International Instruments

### Framework Convention on Tobacco Control (WHO FCTC)

Globally, tobacco is one of the leading causes of preventable deaths today, and a serious indoor air quality problem. A new ground-breaking WHO treaty, the Framework Convention on Tobacco Control (WHO FCTC), adopted unanimously in 2003, aims to address this problem. Among the key treaty elements is the obligation for Parties to adopt and implement measures that provide protection from exposure to tobacco smoke in indoor work places, public transport, and indoor public places.

### 3.1.3. Climate Change

Climate change has a range of complex inter-linkages with our health. These include direct health impacts, such as temperature-related illness and death, extreme weather events and air pollution in the form of spores and moulds. Other impacts include complex pathways such as those that give rise to water and food-borne diseases, vector-borne and rodent-borne diseases, and food and water shortages.



**Figure 3.1.3-1** Schematic Diagram of pathways by which climate change affects health (adapted from McMichael et al, 2003).

## 1) EU Policy

The European Commission has undertaken a series of climate-related initiatives since 1991, when it issued the first Community strategy to limit CO<sub>2</sub> emissions and improve energy efficiency. One of the most important of these was the launch, in March 2000, of the first European Climate Change Programme (ECCP I) (<http://europa.eu.int/comm/environment/climat/eccp.htm>) addressing the EU's greenhouse gas emissions. It led to the adoption of a range of new policies and measures, including the EU's emissions trading scheme, which began on 1 January 2005.

Only recently however, has the cross-cutting issue of climate change and health moved up the agenda in Europe and worldwide with the launch, in 2005, of the second European Climate Change Programme (ECCP II) (<http://ec.europa.eu/environment/climat/eccpii.htm>), and the subsequent publication of the "Human health sectoral report" ([http://circa.europa.eu/Public/irc/env/eccp\\_2/library?!=/impacts\\_adaptation/human\\_health/health\\_sectoral/ EN 1.0 &a=d](http://circa.europa.eu/Public/irc/env/eccp_2/library?!=/impacts_adaptation/human_health/health_sectoral/ EN 1.0 &a=d)) by the working group on impacts and adaptation.

Also related to climate change and health, was the launch in 2005 of the Euro Heat project "Improving Public health responses to extreme weather/heat-waves", which aims to take action to improve public health responses to weather extremes, in particular heat waves. The project supports collaboration among public health authorities, meteorological services and agencies, emergency response agencies and civil societies in developing appropriate interventions, facilitating the sharing of information, and elaborating a tool for early warning systems.

In 2007, the European Commission adopted its first policy document highlighting the health impacts of climate change, a Green Paper entitled, "Adapting to climate change in Europe - options for EU action" ([http://ec.europa.eu/environment/climat/adaptation/green\\_paper/green\\_paper\\_en.pdf](http://ec.europa.eu/environment/climat/adaptation/green_paper/green_paper_en.pdf)). The Green Paper was accompanied by a public consultation on climate change and adaptation and it is foreseen that responses to this consultation will culminate in the publication of a Communication on adaptation to climate change by the end of 2008.

Another significant event in 2007 was a European Centre for Disease Control (ECDC) workshop, held in April, aiming to identify the significant infectious disease threats that would result from existing climate change scenarios, and identify a set of actions to address them. Priority recommendations from the workshop included the following:



- Support for inter-disciplinary research into environmental change health impacts regarding infectious diseases.
- Establishment of Member State (MS) data sharing mechanisms and protocols for epidemiological data collection.
- Communications to raise public awareness of environment and health issues;
- Communications to increase policy-maker awareness of environment and health issues and supporting evidence base;
- Education – particularly the need to increase the level of environmental management related skills and multidisciplinary research within MS, as a core contributor to public health delivery.

Lastly, several European studies have been launched aiming to improve our knowledge of the health impacts of climate change. These include:

- Ensemble, which runs from 2004-2009 and is supported by the 6th Framework Programme under the Thematic Sub-Priority "Global Change and Ecosystems" (<http://ensembles-eu.metoffice.com/>);
- ACACIA (Concerted Action towards a Comprehensive Climate Impacts and Adaptations Assessment for the European Union), a three year project that began in 1997;
- Eden (Emerging Diseases in a Changing European Environment), an integrated project funded under the 6th FP, running from 2005-2010, whose objective is to identify and catalogue European ecosystems and environmental conditions that can influence the distribution of human pathogenic agents;
- The Assessment and Prevention of Acute Health Effects of Weather Conditions in Europe (PWEHE <http://www.epiroma.it/phewe/>);
- The European Phenology Network (<http://www.dow.wau.nl/msa/epr/>), which studies the timing of recurring biological phases, the causes of their timing with regard to biotic and abiotic forces, and the interrelation among phases of the same or different species.

## 2) International Organizations

### WHO

In recognition that climate change is posing ever growing threats to global public health security the WHO has selected as its theme for World Health Day 2008: protecting health from climate change. By doing so, the WHO hopes to put public health at the centre of the UN agenda on climate change.

The WHO, through the European Centre for Environment and Health, also runs the programme Climate Change and Adaptation Strategies for Human health (cCASHh (<http://www.who.dk/ccashh>)) which looks at climate change adaptation strategies for human health, in conjunction with the World Meteorological Organization (<http://www.wmo.ch/>) and other organisations.

Moreover, together with the EU, the WHO is developing a comprehensive Environment and Health Information System (EHIS) (<http://www.euro.who.int/EHindicators>), which aims to provide a harmonised and evidence-based system to support public health and environmental policies in Europe, and will include information on climate change.

### Intergovernmental Panel on Climate Change (<http://www.ipcc.ch/>)

The Intergovernmental Panel on Climate Change, brought together by UNEP and the WMO, reviews scientific research and provides governments with summaries and advice on climate problems. The IPCC assessments are based on information contained in peer-reviewed literature, drawing on the work of hundreds of experts from around the world.

Since its inception in 1988, the IPCC has produced a series of reports and publications that have become standard works of reference in relation to climate change. The IPCC's first Assessment Report was released in 1990, since when it has produced a further three reports, the most recent being the 4th Assessment Report, "Climate Change 2007" (02/02/2007). Notably, the latter indicates that evidence that human activities are causing the planet to warm up is now "unequivocal". The issue of climate change and human health is discussed Chapter 8 of Working Group II, which reviews current vulnerabilities, future impacts, and adaptation strategies for climate change related health impacts (<http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-chapter8.pdf>). The report also highlights the co-benefits of greenhouse gas emission reduction strategies for health (<http://www.ipcc-wg2.org/>).

### 3) International Instruments

**United Nations Framework Convention on Climate Change - UNFCCC**  
(<http://unfccc.int/2860.php>)

The UNFCCC treaty was born over a decade ago in 1992, to begin to consider what could be done to reduce global warming and to cope with inevitable temperature increases. The Convention, which enjoys near universal membership, with 192 countries having ratified, recognizes that the climate system is a shared resource whose stability can be affected by industrial and other emissions of carbon dioxide and other greenhouse gases. Under the Convention, governments:

- Gather and share information on greenhouse gas emissions, national policies and best practices
- Launch national strategies for addressing greenhouse gas emissions and adapting to expected impacts, including the provision of financial and technological support to developing countries
- Cooperate in preparing for adaptation to the impacts of climate change

## The Kyoto Protocol

The Kyoto Protocol was agreed in 1997 at the third Conference of the Parties to the UNFCCC (COP 3) in Kyoto, Japan, and entered into force on 16 February 2005. Essentially, it is an addition to the Climate Convention that rather than simply encouraging developed countries to stabilize GHG emissions, commits them to do so. Under the Protocol signatories are committed to a total cut in greenhouse gas (GHG) emissions of at least 5% from 1990 levels in the commitment period 2008-2012. The EU-15, together with Bulgaria, Czech Republic, Estonia, Latvia, Liechtenstein, Lithuania, Monaco, Romania, Slovakia, Slovenia and Switzerland have committed to reducing their GHG emissions by 8% below 1990 levels.

The targets cover emissions of the six main greenhouse gases, namely:

- Carbon dioxide (CO<sub>2</sub>);
- Methane (CH<sub>4</sub>);
- Nitrous oxide (N<sub>2</sub>O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulphur hexafluoride (SF<sub>6</sub>)

Initially, the Kyoto Protocol sketched out the basic features of its "mechanisms" and compliance system, but did not clearly outline the rules of how they would operate. These were only agreed at the seventh session of the Conference of the Parties to the UNFCCC (COP 7), in 2001 with the adoption of the Marrakech Accords.

To lower the overall costs of reducing GHG emission the Kyoto Protocol includes the following three innovative mechanisms:

- Clean Development Mechanism, under which Annex I Parties may implement projects in non-Annex I Parties that reduce emissions and use the resulting certified emission reductions (CERs) to help meet their own targets
- Joint Implementation, under which an Annex I Party may implement a project that reduces emissions (e.g. an energy efficiency scheme) or increases removals by sinks (e.g. a reforestation project) in the territory of another Annex I Party, and count the resulting emission reduction units (ERUs) against its own target

- Emission Trading, under which an Annex I Party may transfer some of the emissions under its assigned amount to another Annex I Party that finds it relatively more difficult to meet its emissions target.

The prime authority of the Convention is the Conference of the Parties (COP), an association of all member countries (or "Parties") that usually meets annually for a period of two weeks. The Conference of the Parties sessions examine the activities of member countries, consider new scientific findings, and try to capitalize on experience as efforts to address climate change proceed. These sessions are attended by several thousand government delegates, observer organizations, and journalists.

For more information see: [http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php)

### 3.1.4. Chemicals

The bulk of chemicals on the market have never been properly tested and assessed for safety. Although the extent to which every day exposure to chemicals adds to the current disease burden in the general population is not known, research clearly suggests that chemicals may play a role in some allergic reactions,<sup>ii,iii,iv</sup> cancers,<sup>v,vi</sup> birth defects,<sup>vii,viii</sup> and adverse effects on male reproductive health, sperm counts,<sup>ix,x,xi</sup> and fertility.<sup>xii</sup> Chemical exposures have also been implicated in a plethora of other conditions including endometriosis,<sup>xiii,xiv</sup> diabetes,<sup>xv</sup> obesity,<sup>xvi</sup> neurodegenerative conditions,<sup>xvii</sup> immune system effects<sup>xviii</sup> and adverse effects on brain function.<sup>xix,xx</sup>

To date, it has been difficult if not impossible to easily obtain information about the types of health hazards posed by toxic chemicals. While some regulatory agencies have generated lists of carcinogens and developmental and reproductive toxicants, these are often difficult to find and link to sources of information about chemical release or exposure. For other important health effects - such as neurotoxicity or endocrine disruption - the lack of information is even more serious.

## 1) EU Policy

### REACH – Industrial Chemicals

At the EU level, one of the most important pieces of legislation relating to chemicals and human health to have been developed in recent years is REACH (Registration, Evaluation, Authorisation of CHemicals).

To date 100,161 chemicals have had no research carried out as to their effects on human health nor been considered through current legislation, some 30,000 of these are of high concern. In fact, basic safety information on the environmental and health impacts does not exist for 90% of chemicals currently in use.

In order to address this dearth of information, and to provide a higher level of protection of human health and the environment a new piece of EU chemicals regulation, REACH, was agreed on the 13 December 2006 in Second Reading in the European Parliament; and formally adopted at the Environment Council on 18 December, 2006. The new regulation, which entered into force on 1 June 2007, will finally regulate some of the chemicals which are in daily use in our homes, found in our water and in the food we eat.

The aim of REACH is to improve health and environmental protection through the better identification of the properties of chemical substances. The new regulation requires manufacturers and importers to gather information on their substances, and register the information in a central database.

**Registration:** Under REACH each producer and importer of chemicals in volumes of 1 tonne or more per year and per producer/importer – around 30,000 substances - will have to register them with a new Chemicals Agency in Helsinki; which will co-ordinate the evaluation of chemicals, and run the public database that will enable consumers and professionals to find hazard information. Producers and importers may use existing data on chemicals and share information, and will be required to pass safety information onto “downstream users”. A transitional deadline will enable industry to pre-register their substances between the 1 June 2008 and 1 December 2008.

**Evaluation:** Public authorities will be able to examine registration dossiers and substances of concern, and will be able to request more information if necessary. They will also be able to look at animal testing proposals and limit it to the absolute minimum. Additionally, REACH will make data sharing on animal tests compulsory and prescribe the use of alternative methods wherever possible.

**Authorisation:** For chemicals that cause cancer, mutations or problems with reproduction, or that accumulate in human bodies and the environment, use-specific authorisation will be required. Only those companies that can prove an adequate control of risks, and that the economic benefits outweigh the risks where no suitable alternatives exist, will be granted authorisation.

REACH is the result of a comprehensive drafting and consultation process run by the Directorate General of the Environment and the Directorate General of Enterprise. The development of REACH began with the European Commission's White Paper on the Strategy for a future chemicals policy, adopted on 13 February 2001, which aimed to address the shortcomings of the patchwork of existing Directives and Regulations on chemicals. The REACH proposal was adopted by the Commission on 29 October 2003. The European Parliament adopted its first reading opinion on 17 November 2005, whilst the Council reached a Political Agreement for a Common Position on 13 December 2005. This Common Position was formally adopted on 27 June 2006 during the Environment Council.

Whilst REACH legislation represents a step in the right direction there is still cause for concern. Loopholes and provisions for self-regulation mean that REACH is vulnerable to manipulation by the chemicals industry. For example, although REACH calls for the progressive substitution of the most hazardous chemicals with safer alternatives when these are available (the so-called "substitution principal"), many "high concern" chemicals will nevertheless be allowed onto the market if producers can claim they are able to adequately control them. Moreover health and safety information will not need to be provided for low volume chemicals, which represent a large majority of the substances covered by REACH.

An interim strategy has been developed by the Commission to enable a smooth transition from existing chemicals legislation to REACH, within which are a number of REACH Implementation Projects (RIPs). This interim strategy will enable the European Chemicals Bureau in Ispra to develop REACH tools and methodologies.

Since June 2007, detailed REACH guidance documents have been available on the European Chemicals Agency (ECHA) website.

For more information see: (<http://europa.eu.int/comm/environment/chemicals/index.htm>)

## RoHS

RoHS stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment." The RoHS Directive came into force in 2006, and bans the placing of new electrical and electric equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants on the EU market.

### Endocrine Disrupting Chemicals

([http://ec.europa.eu/environment/endocrine/index\\_en.htm](http://ec.europa.eu/environment/endocrine/index_en.htm))

The endocrine system is a complex network of glands, hormones and receptors that controls growth and development during childhood, and regulates bodily functions such as reproduction, immunity, metabolism and behaviour during adulthood. The endocrine system works in the following way: hormones, secreted into the blood by the endocrine glands, circulate around the body and modulate cellular or organ functions by binding to receptors in target cells in different organs and tissues.

According to the EU definition, an endocrine disrupter is an "exogenous substance or mixture that alters function(s) of the endocrine system and consequently causes adverse health effects in an intact organism, or its progeny, or (sub)populations." Endocrine disrupters act in a number of ways:

- They mimic biological hormones and bind to receptors stimulating an unwarranted response. (Agonistic Effect)
- They bond to receptor but do not activate them, thereby preventing the natural hormone from binding to the receptor. (Antagonistic Effect)
- They alter the amounts of natural hormones present in the circulation by binding to transport proteins.
- They affect the synthesis or breakdown rates of natural hormones, thereby interfering with the body's metabolic processes.

Endocrine disrupters have already been shown to cause abnormalities, affect reproductive performance, and produce skeletal deformities in wildlife. In humans, it is suggested they may be responsible for declining sperm counts and an increased incidence of male children born with genital malformations in some geographical regions.



Based upon mounting evidence of the potential problems of endocrine disruption, in 1998 the European Parliament adopted a resolution calling on the Commission to take action to improve the legislative framework, reinforce research efforts and make information available to the public.

After the Commission's Scientific Committee for Toxicity and Ecotoxicity published a report entitled "Human health effects of endocrine disrupting chemicals with emphasis on wildlife and ecotoxicity methods" in 1999, the Commission adopted the "Community strategy for endocrine disrupters", which is based on the precautionary principal. The second update on strategy implementation was presented in 2004.

Under this Strategy the following short-term, medium-term and long-term actions are being taken:

**Short term action:**

- The establishment of a priority list of substances for further evaluation of their role in endocrine disruption  
([http://ec.europa.eu/environment/endocrine/strategy/substances\\_en.htm](http://ec.europa.eu/environment/endocrine/strategy/substances_en.htm))
- Monitoring levels of suspect chemicals in food and the environment.
- Identification of vulnerable groups of people (such as children) who need to be given special consideration
- Establishment of an international network to enable information exchange and co-ordination of research and testing
- Communication with the public and continuing consultation with stakeholders. The development and validation of internationally agreed test methods to assess endocrine disruption in people and wildlife

**Medium term action:**

- The development of a European test strategy for identifying and assessing endocrine disrupters that is consistent with similar strategies in other countries such as the USA and Japan.

- The co-ordination and funding of international research into the underlying mechanisms of endocrine disruption and into understanding of how these mechanisms can impact on human health. The Commission is working closely with the World Health Organisation (WHO) through the International Programme for Chemical Safety (IPCS) in addition to overseas governments, departments and agencies. Research has been funded under the Fourth, Fifth and Sixth Framework Programmes for R&D and has been included in the calls for proposals under the Seventh Framework.
- The identification of alternative chemicals to substitute those on the priority list will be undertaken when appropriate test methods for ensuring the safety of these substitute chemicals are available.

**Long term action:**

- Addition of new or adaptation of existing toxicity tests for hazard assessment and the adaptation of methodology for assessing the health risk to people and wildlife (risk assessment).
- Updating the way in which chemicals are classified, packaged, labelled, used or marketed in order to ensure safe usage and disposal within the EU. Of particular relevance is the Commission's REACH regulation, which addresses whether industrial chemicals with endocrine disrupting potential will have to be substituted or be authorised under the adequate control provision.
- Legislation relating to the testing, assessment, use and disposal of specific substance groups such as pesticides, biocides and consumer products will also require review, so as to ensure that those with endocrine disrupting properties are properly managed (risk management).
- Endocrine disruptors not addressed by specific legislation (e.g. natural substances and by-products, such as hormones and dioxins) will be dealt with under environmental legislative instruments such as the Water Framework Directive, or through the adaptation of existing international legislation such as the UNECE POPs Protocol.

For more information see:

[http://ec.europa.eu/environment/endocrine/documents/sec\\_2004\\_1372\\_en.htm](http://ec.europa.eu/environment/endocrine/documents/sec_2004_1372_en.htm)

The following international collaborations regarding endocrine disruption and involving the EU have been established:

- Global Endocrine Disruption Research Inventory ([http://oaspub.epa.gov/endocrine/pack\\_edri.All\\_Page](http://oaspub.epa.gov/endocrine/pack_edri.All_Page))
- Global assessment of the state-of-the-science of endocrine disruptors ([http://www.who.int/ipcs/publications/endocrine\\_disruptors/endocrine\\_disruptors/en/](http://www.who.int/ipcs/publications/endocrine_disruptors/endocrine_disruptors/en/))
- EU-US Science and Technology Agreement – under this agreement common research priorities were identified
- Endocrine disruptors testing and assessment task force (EDTA)

For more information see: [http://europa.eu.int/comm/environment/endocrine/index\\_en.htm](http://europa.eu.int/comm/environment/endocrine/index_en.htm)

**Dioxins** (<http://europa.eu.int/comm/environment/dioxin/index.htm>)

Dioxins, an unwanted by-product of industrial processes, and to a small extent forest fires and volcanic activity, are a group of polychlorinated aromatic compounds with similar structures, chemical and physical properties. As fat-soluble toxic substances, they are found in all environmental settings and bio-accumulate up the food chain. Highly resistant to degradation and semi-volatile, dioxins can travel over long distances and act as trans-national pollutants. In the EU the main sources of dioxin emissions are: residential combustion (30%), open burning of waste (backyard burning) (15%), wood preservation (15%), the iron and steel industry (8%), power production (5%), non-ferrous metals (5%), and the chemicals industry (5%).

Effects on human health include impairment of the reproductive functions, nervous system, hormonal system, and immune system. Even very small concentrations of dioxins can cause negative effects on the environment and human health, in particular on the most vulnerable groups like children.

Whilst exposure to dioxins in the EU fell by 10% per year between the mid-eighties and the mid-nineties, the daily intake of dioxin-like compounds is still above the levels recommended by the WHO.

In order to protect the environment and human health from the effects of dioxin exposure, in October 2001 the Commission adopted the “Communication on a Community Strategy for Dioxins, Furans and Polychlorinated Biphenals”. A Dioxin Strategy was formally adopted in 2004. Under this strategy the following activities were conducted: work on the project “Dioxin Emissions in Candidate Countries” (a copy of the report can be found at: [http://ec.europa.eu/environment/dioxin/pdf/rapport\\_2005.pdf](http://ec.europa.eu/environment/dioxin/pdf/rapport_2005.pdf)), work on integrated environment and health information focused on the Baltic Sea, work on best available techniques (BATs), limit values for dioxins in feed and food, and work on screening methods.

Dioxins are listed as unintentionally released Persistent Organic Pollutants (POPs) and regulated under Regulation (EC) No850/2004 on persistent organic pollutants ([http://ec.europa.eu/environment/pops/index\\_en.htm](http://ec.europa.eu/environment/pops/index_en.htm)). According to this regulation, although unintentionally released, dioxin releases are to be continuously and cost-effectively reduced as soon as possible.

Finally, the adoption of the European Community Implementation Plan for the Stockholm Convention on POPs is scheduled for 2007.

For more information see: <http://ec.europa.eu/environment/dioxin/index.htm#links>

### **Prevention of Chemical Accidents**

(<http://europa.eu.int/comm/environment/seveso/index.htm>)

In 1976 a dense cloud of vapour containing tetrachlorodibenzoparadioxin (TCDD) was released after an accident at a pesticide and herbicide manufacturing plant in Seveso, Italy. Large quantities of the substance, which is lethal to humans in minute quantities, were dispersed in the surrounding area. More than 600 people had to be evacuated from the surrounding area, and as many as 2000 people were treated for dioxin poisoning.

As a result, the so-called Seveso Directive (Council Directive on the major-accident hazards of certain industrial activities) was adopted in 1982. This Directive was subsequently amended, in 1987 and 1988, following the 1984 Union Carbide accident in Bhopal, India, and the 1986 Sandoz warehouse accident in Basel, Switzerland. The Directive was eventually replaced in 1996 by the “Seveso II” Directive, which included a revision and extension of its scope, the introduction of new requirements relating to safety management systems, emergency planning and land-use planning, and a reinforcement of the provisions on inspections to be carried out by Member States.

In 2003 the Directive was extended by Directive 2003/105/EC (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32003L0105:EN:HTML>), which broadened the scope to cover risks arising from storage and processing activities in mining, from pyrotechnic and explosive substances, and from the storage of ammonium nitrate and ammonium nitrate based fertilisers.

The Major Accident Hazards Bureau provides technical support for the implementation and monitoring of the Seveso II Directive, concerning the processing and storage of hazardous substances.

For more information see: <http://ec.europa.eu/environment/seveso/index.htm>

### **Volatile Organic Compounds (VOCs)**

The main policy instrument for the reduction of emissions of volatile organic compounds (VOCs) is the VOC Solvents Directive, which entered into force in 1999 and sets limit values for VOCs in waste gases, and maximum levels for fugitive emissions for solvent-using operators. Under this Directive Member States are required to either implement the Directive's emission limit values, or design and implement a national plan for existing installations that would achieve the same reduction. The implementation date for existing installations is the 31<sup>st</sup> October 2007.

For more information see: <http://europa.eu.int/comm/environment/air/stationary.htm#3>

### **Scientific Committee on Health and Environmental Risks - SCHER**

([http://europa.eu.int/comm/health/ph\\_risk/committees/04\\_scher/04\\_scher\\_en.htm](http://europa.eu.int/comm/health/ph_risk/committees/04_scher/04_scher_en.htm))

SCHER deals with questions relating to examinations of the toxicity and ecotoxicity of chemicals, biochemicals and biological compounds whose use may have harmful consequences for human health and the environment. In particular, the Committee's mandate calls on it to address questions that relate to new and existing chemicals, the restriction and marketing of dangerous substances, biocides, waste, environmental contaminants, plastic and other materials used for water pipe work (e.g. new organics substances), drinking water, indoor and ambient air quality. It also addresses questions relating to human exposure to mixtures of chemicals, sensitisation and identification of endocrine disrupters.

A list of SCHER opinions relating to the environment can be found here: [http://ec.europa.eu/health/ph\\_risk/committees/04\\_scher/scher\\_opinions\\_en.htm](http://ec.europa.eu/health/ph_risk/committees/04_scher/scher_opinions_en.htm)

## 2) International Organizations

**WHO** ([http://www.who.int/topics/chemical\\_safety/en/](http://www.who.int/topics/chemical_safety/en/))

The International Programme on Chemical Safety (IPCS, <http://www.who.int/ipcs/en/>), established in 1980, is a joint programme of three cooperating organizations - ILO, UNEP and WHO, implementing activities related to chemical safety. WHO is the Executing Agency of the IPCS, whose main roles are to establish the scientific basis for safe use of chemicals, and to strengthen national capabilities and capacities for chemical safety.

The WHO also run Intergovernmental Forum on Chemical Safety (IFCS) (<http://www.who.int/ifcs/>), Inter-Organization Programme for the Sound Management of Chemicals (IOMC) (<http://www.who.int/iomc/en/>), Information Exchange Network on Capacity Building for the Sound Management of Chemicals (<http://www.who.int/ifcs/infocap/index.htm>) and also consider children's health and chemicals (<http://www.who.int/ceh/risks/cehchemicals/en/>).

**OECD** (<http://www.oecd.org/ehs/>)

The OECD's programme on chemicals addresses the development and co-ordination of environment, health and safety activities internationally. The principal objectives of the OECD Chemicals Programme are as follows:

- To assist OECD Member countries' efforts to protect human health and the environment through improving chemical safety;
- To make chemical control policies more transparent and efficient and save resources for government and industry; and
- To prevent unnecessary distortions in the trade of chemicals and chemical products.

The work of the Chemicals Programme focuses mainly on production, processing and use of industrial chemicals, however, work also extends to pesticides, chemicals accidents and biotechnology. Documents relating to all these activities can be downloaded from the Chemical programme website ([http://www.oecd.org/topic/0,3373,en\\_2649\\_34365\\_1\\_1\\_1\\_1\\_37407,00.html](http://www.oecd.org/topic/0,3373,en_2649_34365_1_1_1_1_37407,00.html)). Programme work is overseen by the "Joint Meeting" ([http://www.oecd.org/document/21/0,3343,en\\_2649\\_34365\\_34464597\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/21/0,3343,en_2649_34365_34464597_1_1_1_1,00.html)), and is undertaken by subsidiary bodies.

In June 2006, the OECD launched the eChemPortal (<http://webnet3.oecd.org/echemportal/>) the Global Portal to Information on Chemical Substances. This portal offers free public access to information on properties and effects of chemical substances.

### 3) International Instruments

#### **Aarhus Protocol on Persistent Organic Pollutants (POPs)**

([http://www.unece.org/env/lrtap/pops\\_h1.htm](http://www.unece.org/env/lrtap/pops_h1.htm))

The Protocol aims to eliminate any discharges, emissions and losses of POPs. It entered into force on 23 October 2003.

#### **Stockholm Convention** (<http://www.pops.int>)

The Convention is a global treaty to protect human health and the environment from POPs. In implementing the Convention, Governments will take measures to eliminate or reduce the release of POPs into the environment. The Convention entered into force on 17 May 2004.

#### **UNEP** (<http://www.chem.unep.ch/>)

UNEP provides the Secretariat for the two Conventions. These instruments establish strict international regimes for initial lists of POPs (16 in the UNECE Protocol and 12 in the Stockholm Convention). Both instruments also contain provisions for including additional chemicals into these lists, and have been ratified by EU.

#### **Rotterdam Convention**

The Rotterdam Convention on prior informed consent of imports (<http://www.pic.int/>) enables the world to monitor and control the trade in certain hazardous chemicals. While it is not a recommendation to ban the global trade or use of specific chemicals, it is a useful instrument to provide importing parties with the power to make informed decisions on which of these chemicals they want to receive, and to exclude those they cannot manage safely. It entered into force on 24 February 2004.

#### **OSPAR Convention - 1992** (<http://www.ospar.org/>)

The OSPAR Convention is the current agreement on international cooperation on the protection of the marine environment of the North-East Atlantic. Under the Convention the Hazardous Substances Strategy has as its objective the prevention of maritime pollution by reducing discharges, emissions and losses of hazardous substances. Its ultimate goal is to reduce hazardous pollution of the marine environment to close to zero for man-made synthetic substances.

### **Strategic Approach to International Chemicals Management - SAICM**

(<http://www.chem.unep.ch/saicm/>)

SAICM is a response to the 2002 Johannesburg earth summit's "aim to achieve, by 2020, the use and production of chemicals in ways that lead to the minimisation of significant adverse effects on human health and the environment". SAICM is intended as a non-binding "toolkit" to help countries apply this agreement and was adopted at the International Conference on Chemicals Management (ICCM <http://www.chem.unep.ch/ICCM/ICCM.htm>) in February 2006.

SAICM negotiations were bogged down by disagreements between the USA and the EU, with America seeking to limit SAICM's scope, removing targets and timetables, and a weakening of references to the most dangerous chemicals, such as endocrine disrupters and heavy metals. The USA also sought stronger references to the voluntary nature of SAICM.

SAICM includes four resolutions on implementation arrangements, known as the "quick start" programme, and comprises the following three core texts:

- The Dubai Declaration - This expresses the commitment to SAICM by Ministers, heads of delegation and representatives of civil society and the private sector.
- The Overarching Policy Strategy – This sets out the scope of SAICM
- The Global Plan of Action – This sets out proposed "work areas and activities" for implementation of the Strategic Approach.

#### **3.1.5. Pesticides**

The term "Pesticide" describes a range of products comprised of plant protection products (PPP) and biocides designed to control pests. By influencing the processes in living organisms they have the potential to kill or control harmful pests such as insects, weeds, and diseases.



Over the past 60 years farming has become increasingly dependent on pesticide use. Pesticides are now used on a large scale and considered essential by some in modern cropping systems as a way to improve and safeguard agricultural yields and minimise labour input. However, pesticides can also have unwanted adverse effects on non-target organisms. Consequently, their widespread use has created many environmental and health problems.

Human health can be negatively affected both by direct exposure (e.g. industrial workers producing pesticides and people applying them) or indirect exposure (e.g. via residues in food and contaminated drinking water, or exposure of bystanders to spray drift). In either case, pesticide exposure even at low-doses may increase the risk of developmental, neurodevelopmental and reproductive disorders, immune-system disruption, endocrine-disruption, impaired nervous-system function, and development of certain cancers, whilst acute exposure to pesticides can lead to death or serious illness (see HEAL/PAN Europe briefing “Cutting back on pesticides for healthier lives” [http://www.env-health.org/IMG/pdf/Briefing\\_Feb\\_2007\\_FINAL-2.pdf](http://www.env-health.org/IMG/pdf/Briefing_Feb_2007_FINAL-2.pdf)).

In the EU, the monitoring results for pesticide residues in fruits and vegetables indicate a worrying trend towards the increase of residues in food. The last available results indicate that almost half (42.1%) of all fruits and vegetable samples are contaminated by pesticide residues. A significant percentage (5.1%) is contaminated at levels above the Maximum Residue Limits (MRLs) permitted by law. The level of contamination in water is equally disturbing. In France, for example, a 2006 survey by the French Environmental Institute found that 96% of surface water and 61% of groundwater samples contained residues of at least one pesticide. Almost one third of all pesticides were found in concentrations exceeding the threshold for human consumption (above 0.1µg/l). Many of the substances found have been banned due to their severe health and environmental hazards; for example lindane, aldrin or dieldrin are organochlorine insecticides associated with cancer and endocrine disruption. These findings show that contamination persists long after the substances have been prohibited.

## 1) EU Policy

Although pesticides have been regulated for some time in the EU, pesticide residues are still prevalent in fresh produce, whilst soil and water contamination remain a problem.

The current legal framework relating to pesticides includes a Pesticides Authorisation Directive from 1991 (91/414/EC), one of Europe's key legislations for controlling pesticides and their release on the market. There are also rules defining maximum residue limits (MRL) on food and feedstuffs, and a Biocidal Directive, the aim of which is to harmonise the European market for biocidal products and their active ingredients. The EU also regulates pesticides under the Water Framework Directive, which lists 13 plant protection products as priority substances, under the Directive on hazardous waste, and under Directives aimed at protecting the health and safety of workers.

In 2006, the European Commission adopted a revision of the pesticides authorisation directive and proposed a new Framework Directive and a Thematic Strategy on the Sustainable use of pesticides, one the seven thematic strategies identified in the 6th Environmental Action Programme (EAP). The Thematic Strategy will for the first time address the use phase of pesticides. The three Commission proposals are being discussed and approved by the European Parliament and Council during 2007 and 2008.

Despite these new developments however, there remain loopholes in EU pesticide policy. For example, current risk assessment procedures do not consider the additive effects of a combination of pesticides and multiple exposure routes to human health. Moreover, they rely solely on data from healthy adult organisms and therefore do not provide adequate protection for children. Finally, testing is not sufficient for certain toxic properties.

The Parliamentary ENVI Committee had its first reading of the legislation in June 2007. MEPs voted unanimously to minimise or eliminate rather than simply "reduce" the risks of pesticides, and endorsed plans for a ban on aerial spraying with pesticides. They also backed the following: the idea of National Action Plans (NAPs), calling for Member States to set up a system of taxes or levies on pesticides to fund the NAPs; the "substitution principle", whereby more dangerous substances will be removed from the market where safer alternatives exist; the provision of training for professional users of pesticides and awareness-raising for the public; special measures to protect water from pesticide pollution; and the banning of pesticides in all areas used by the public and in surrounding no-spray zones.

For more information see:

Plant Protection Products: <http://europa.eu.int/comm/environment/ppps/home.htm>

Biocides: <http://europa.eu.int/comm/environment/biocides/index.htm>

## 2) International Instruments

### **International Code of Conduct on the Distribution and Use of Pesticides**

(<http://www.fao.org/DOCREP/005/Y4544E/Y4544E00.HTM>)

The International Code of Conduct on the Distribution of Pesticides was adopted in 1985, establishing voluntary standards of conduct for all public and private entities engaged in, or associated with, the distribution and use of pesticides. It was one of the first voluntary Codes of Conduct aimed at improving food security and protecting the environment and human health, and has since become a global standard for pesticide management.

A revision of the Code was undertaken in 1999, and whilst the main body of the text remained unaltered, important amendments were made. In particular the revised Code includes a life-cycle concept of pesticide management, whilst also explicitly invites governments, NGOs and the pesticide industry to provide regular feedback on implementation.

### **Stockholm Convention on Persistent Organic Pollutants (POPs)** (<http://www.pops.int>)

The Convention is a global treaty to protect human health and the environment from POPs. The 12 POPs initially included under the treaty are the pesticides endrin, mirex, toxaphene, chlordane, heptachlor, aldrin, dieldrin and DDT; the industrial chemicals hexachlorobenzene (also used as a pesticide) and PCBs; and the industrial byproducts dioxins and furans. In implementing the Convention, Governments will take measures to eliminate or reduce the release of POPs into the environment. The Convention entered into force on 17 May 2004.

### **Rotterdam Convention** (<http://www.pic.int/>)

As previously referred to in the “Chemicals” chapter, the Rotterdam Convention on prior informed consent of imports is a tool to enable the world to monitor and control the trade in certain hazardous chemicals. While it is not a recommendation to ban the global trade or use of specific chemicals, it is a useful instrument to provide importing parties with the power to make informed decisions on which of these chemicals they want to receive, and to exclude those they cannot manage safely. It entered into force on 24 February 2004.

The Convention covers pesticides that have been banned or severely restricted for health or environmental reasons by Parties. Annex III of the Convention contains a list of 39 chemicals, including 24 pesticides, which are subject to the Prior Informed Consent (PIC) procedure. There exists a clearing house for Annex III which provides information on evaluations submitted by governments and peer reviewed processes and safety data sheets.

### 3.1.6. Mercury

Mercury and its compounds are highly toxic to humans, ecosystems and wildlife. High doses can be fatal to humans, but even relatively low doses can have serious adverse impacts on neurodevelopment, and have recently been linked with possible harmful effects on the cardiovascular, immune and reproductive systems. Organic mercury, in the form of methylmercury, is the most toxic form to which humans are usually exposed.

Eating contaminated fish is the major source of human exposure to methylmercury. The populations most at risk are fetuses, infants, and young children. Consequently, fish consumption by pregnant women, young children, and women of childbearing age is a cause for concern because of the likelihood of mercury exposure. The Extended Impact Assessment (ExIA)

([http://europa.eu.int/comm/environment/chemicals/mercury/pdf/extended\\_impact\\_assessment.pdf](http://europa.eu.int/comm/environment/chemicals/mercury/pdf/extended_impact_assessment.pdf)) of the Mercury Strategy estimates that almost half (44%) of young children in France could have levels exceeding health standards, which would put them at risk of mercury poisoning. The ExIA states that anywhere from three to 15 million people in Europe alone have mercury levels around the recommended limit and a percentage have levels ten times as high, at which there are clear effects on neurodevelopment.

Mercury in dental amalgams also contributes a significant source to environmental pollution, and are increasingly viewed as potential public health concern by several countries, in terms of their direct health impact to patients and dental assistants, and through their life cycle contamination of waterways and eventually food sources such as fish.

#### 1) EU Policy

The Commission produced a Strategy on Mercury on January 31st 2005, which covers nearly all aspects of mercury pollution, use, and exposure in the EU. The Extended Impact Assessment of the strategy integrated all the different actions that have already been taken in the European Union or that are in the pipeline with a view to better identifying gaps and proposing additional action.

In terms of EU policy the strategy is very important because it represents the first time one pollutant is considered in one document and not within a Thematic Strategy. Actions in the strategy specifically focused on health address: amalgam (used for dental fillings) - Action 6 and Action 8; mercury in health care devices, such as thermometers and sphygmomanometers - Action 7 and Action 8; dietary intakes - Action 11; and mercury in food - Action 12).

The Strategy can be found at:

[http://europa.eu.int/comm/environment/chemicals/mercury/pdf/com\\_2005\\_0020\\_en.pdf](http://europa.eu.int/comm/environment/chemicals/mercury/pdf/com_2005_0020_en.pdf)

For more information see: (<http://ec.europa.eu/environment/chemicals/mercury/index.htm>)

In addition to the Mercury Strategy, mercury disposal is regulated under the 2000 Water Framework Directive, the Hazardous Waste Directive, and the Waste Electric and Electronic equipment Directive, whilst its use in electric and electronic equipment is restricted under the 2002 ROHS Directive.

The following is a list of highlights of recent EU action relating to mercury.

### **Mercury and Fish Consumption**

The European Food Safety Authority (EFSA, <http://www.efsa.eu.int/>) has stated that mercury levels are up in some fish and very close to recommended levels for protection of public health. EFSA recommended ([http://www.efsa.eu.int/press\\_room/press\\_release/258\\_en.html](http://www.efsa.eu.int/press_room/press_release/258_en.html)) that women of childbearing age (in particular, those intending to become pregnant), pregnant and breastfeeding women as well as young children select fish from a wide range of species, without giving undue preference to large predatory fish such as swordfish and tuna.

Further to this recommendation the European Commission released an “Information Note” ([http://europa.eu.int/comm/food/food/chemicalsafety/contaminants/information\\_note\\_mercury-fish\\_12-05-04.pdf](http://europa.eu.int/comm/food/food/chemicalsafety/contaminants/information_note_mercury-fish_12-05-04.pdf)) based on the need to give more specific advice to vulnerable groups and to provide them with concrete information. They suggest that women who might become pregnant, women who are pregnant or women who are breastfeeding, and young children should not eat more than one small portion (<100g) per week of large predatory fish, such as swordfish, shark, marlin and pike. If they eat this portion, they should not eat any other fish during this period. Also, they should not eat tuna more than twice per week.

### **Mercury in Measuring Devices**

Mercury has many uses in the health care sector, and can be found in measuring devices such as thermometers and blood pressure instruments. Through breakages and improper disposal, these devices contaminate the environment and affect human health. As a result, EU-wide restrictions on mercury in measuring devices are in the process of being developed or adopted. In 2006 the Commission presented a proposal banning mercury in new fever thermometers, manometers, barometers and sphygmomanometers for health care and veterinary use. The proposal now has to go through the European Parliament and Council under the co-decision procedure.

According to a recent (2007) communication from the Commission to the European Parliament, concerning the common position of the Council on the adoption of the strategy (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007PC0205:EN:NOT>), it appears that the ban on sphygmomanometers remains the primary bone of contention between the institutions.

### **Mercury Export and Import Ban and Safe Storage of Metallic Mercury**

As regards mercury exports, in May 2007 the European Parliament's Environment and Public Health Committee (ENVI) adopted a report calling for the planned ban on mercury exports to be brought forward by seven months to the 1st December 2010. At present there are no safe ways of disposing of mercury. Until now, Europe has been building up a stock of mercury that it disposes of by despatch to developing countries with less stringent safety standards.

The Committee also voted on draft legislation that would bring an end the EU's current mercury disposal practices, as well as to the export of cinnabar ore, calomel and mercury compounds with a mercury concentration of above 5% by weight; and on a proposal for the future storage of mercury to be only temporary, and that under the polluters' pays principle storage facilities themselves would be responsible for the safe storage of mercury. It was foreseen that a fund be established in order to ensure that the financial resources from relevant industries are in place for this purpose.

MEPs proposed several other amendments to the Commission legislation, including that mercury imports be banned as of the 1st July 2010, with Member States instead meeting their own demands of mercury through waste recovery. They also called for the mercury trade to be closely monitored, and called for stricter rules on storage.

The Environment Council voted on the Parliament's proposals in June 2007. As regards storage, the Council agreed that further work is needed in order to find a safe method for mercury disposal, and that metallic mercury can only be deemed appropriate for underground storage once specific environmental criteria have been developed by the EU's comitology process. However, the Council rejected the Parliament's proposal for the export ban to begin in 2010, maintaining the Commission's original 2011 start date, and voted to ban only metallic mercury, not mercury compounds and mercury-containing products.

### **Mercury in Dental Amalgams**

Although dental amalgams are regulated under the Medical Devices Directive there are at present no EU wide restrictions on the use of mercury in amalgams. In late 2007, Norway and Denmark banned the use of amalgams on environmental grounds, and it is anticipated that other Nordic countries may follow. Under the Mercury Strategy the chlor-alkali industry will have to phase out mercury cells, which means that dental amalgam will become the principal use of mercury in the EU. In light of this fact, the Commission has decided to re-examine the possibilities for substitution, and has asked the Medical Devices Expert Group to consider the use of mercury dental amalgam. It has also published opinions from the Scientific Committee on Health and Environmental Risks (SCHER), and the Committee on Emerging and Newly Identified Health Risks. Opinions from both Committees in early 2008????

## **2) International Organizations**

### **UNEP Mercury Programme** (<http://www.chem.unep.ch/mercury/default.htm>)

The UNEP Governing Council concluded (<http://www.chem.unep.ch/mercury/GC22-results.htm>), at its 22nd session in February 2003, after considering the key findings of the Global Mercury Assessment report ([http://www.chem.unep.ch/mercury/Report/Final\\_Assessment\\_report.htm](http://www.chem.unep.ch/mercury/Report/Final_Assessment_report.htm)), that there is sufficient evidence of significant global adverse impacts from mercury ([http://www.chem.unep.ch/mercury/adverse\\_impacts.htm](http://www.chem.unep.ch/mercury/adverse_impacts.htm)) to warrant further international action to reduce the risks to humans and wildlife from the release of mercury to the environment.

At the Governing Council Meeting in February 2005, the need for international action was reiterated, but parties did not agree upon a legally binding instrument. Instead, a number of partnerships were created to work on specific projects and technology transfer (<http://www.chem.unep.ch/mercury/GC23-results.htm>).

The proposal for an international instrument was revisited at the UNEP Governing Council meeting in February 2007. In the Decision adopted by the 24<sup>th</sup> session of the Governing Council, it was recognised that “current efforts to reduce risks from mercury are not sufficient to address the global challenges posed by mercury,” but once again no legally binding instrument was agreed upon. Instead it was noted “that further long-term international action is required to reduce risks to human health and the environment and that, for this reason, the options of enhanced voluntary measures and new or existing international legal instruments will be reviewed and assessed in order to make progress in addressing this issue.” (<http://www.unep.org/gc/gc24/>)

### 3.1.7. Waste

Waste is loosely defined as material that is considered of no further use to the owner, and can be either solid, liquid or gaseous. Every year Member States produce 1.3 billion tonnes of waste, a figure that is steadily rising. This includes waste from manufacturing (427 million tonnes), from energy production and water supply (127 million tonnes), from the construction sector (510 million tonnes), and municipal waste (241 million tonnes). The OECD estimates that by 2020 the EU could be generating 45% more waste than in 1995. Much of what is thrown away is either incinerated or dumped into landfill sites (67%).

Waste is one of the most visible environmental issues. However, waste management is also a public health concern. The disposal, treatment, reduction, recycling, segregation and modification of waste, often leads to the release of various pollutants, which directly and indirectly affect the health of citizens.

Some of the environmental health problems associated with landfill include: emissions of carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>), both of which contribute to climate change, which in turn will have a marked impact on human health; seeping of pesticides, organic compounds, cyanide, nitrates and heavy metals, which pollute groundwater; and the deposition of hazardous materials in the soil.

Waste incineration on the other hand, produces chemical reactions that lead to the production of new compounds, some of which like furans, dioxins, acid gases, heavy metals and particulates are extremely toxic.



## 1) EU Policy

The European Union's Sixth Environment programme identifies waste as one of the four top priorities. The EU's objective is to significantly reduce the amount of waste generated by Member States by encouraging a shift towards more sustainable consumption patterns, using waste prevention initiatives, better use of resources, and improving final disposal and monitoring.

Three key principals underpin the EU's waste management strategy:

- **Waste Prevention:** A key factor in the strategy is to reduce the amount of waste generated in the first place, and to reduce the presence of hazardous substances in the products that will eventually be disposed of. The EU sees waste prevention as closely linked with the improvement of manufacturing methods, and with influencing consumers to demand products with less packaging, and which are greener.
- **Recycling and reuse:** The recovery of as many materials as possible from waste that cannot be prevented is the second key factor in the EU's waste strategy. The following "waste streams" have been identified by the Commission for priority attention to reduce their overall environmental impact: packaging waste, end-of-life vehicles, batteries, electrical and electronic waste.
- **Improving final disposal monitoring:** According to the EU strategy, any waste that cannot be avoided or recycled should be incinerated and as a last resort put into landfill. A directive setting strict guidelines on landfill management was recently approved by the Commission, banning certain types of rubbish such as tyres, and setting a target for a reduction in the amount of biodegradable rubbish that ends up in landfill. Tough limits on emission levels from incinerators have also been established in the Waste Incineration Directive. The EU aim is to reduce emissions harmful to human health and environment, such as emissions of dioxins, nitrogen oxides (NO<sub>x</sub>), sulphur dioxides (SO<sub>2</sub>), hydrogen chlorides (HCL), carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>).

EU waste policy deals with the following: Batteries; biodegradable waste; electric and electronic equipment; end of life vehicles; hazardous waste; incineration of waste, landfill of waste; mining; packaging; PCBs/PCTs; sewage sludge shipment of waste; and waste oils.

Below is an overview of the EU's key existing waste legislation.

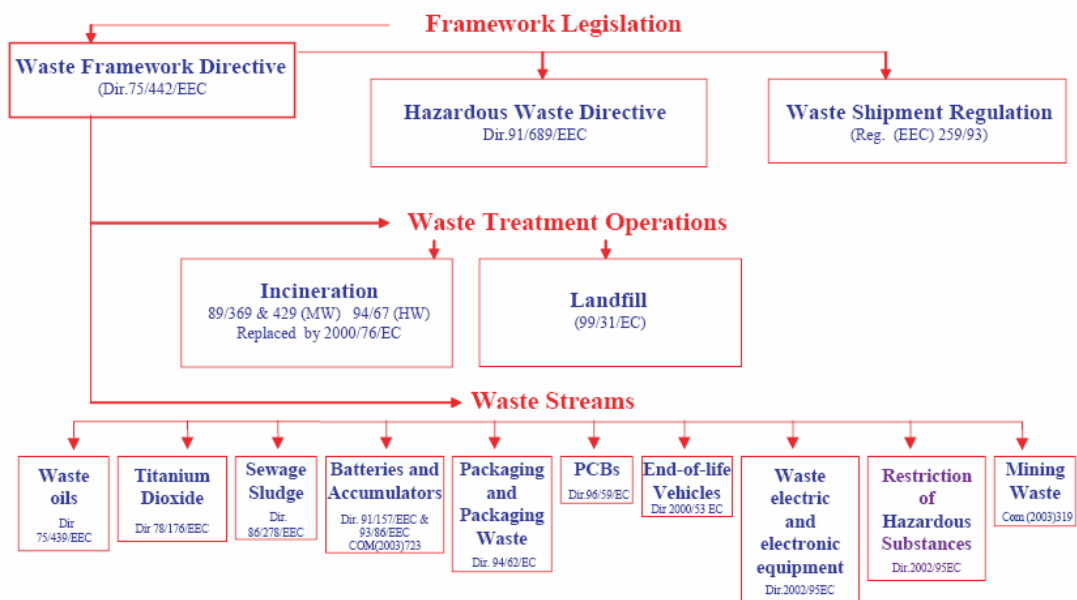


Figure 3.1.7-1 EU Waste Legislation

**Thematic Strategy on the Prevention and Recycling of Waste**

In 2005 the European Commission suggested a new waste recycling and prevention strategy, one of seven programmed in the Sixth Environmental Action Plan. The Strategy is an attempt to address some of the problems with current European waste policy, and shift direction into a mature policy area that deals with the wider question of society's increasing resource use. As stated by the European Council meeting in Gothenburg, in June 2001, "the relationship between economic growth, consumption of natural resources and the generation of waste must change. Strong economic performance must go hand in hand with sustainable use of natural resources and levels of waste [...]"

Accordingly, the Thematic Strategy brings prevention and recycling together, encompassing all issues related to waste generation and management. The Thematic Strategy is based on two premises:

- 1 – Waste policy should focus on the environmental impact of using resources
- 2 – Waste policy should take a life-cycle approach

The first step proposed under this strategy is a revision of the 1975 Waste Framework Directive to include recycling standards and an obligation for EU Member States to develop national waste prevention programmes. The Thematic Strategy also envisages integrating the Hazardous Waste and Titanium Dioxide Directives into the Waste Framework Directive.

The European Parliament gave its first reading opinion on the revision of the Waste Framework Directive in February 2007. See details at <http://www.europarl.europa.eu/oeil/file.jsp?id=5303132>

With regard to simplification, the Thematic Strategy also foresees a clarification of the definitions of waste and when it ceases to be waste, of waste and non-waste by-products, and of the distinction between recovery and disposal. Waste definitions are dealt with in the Commission's By-products Communication, which provides guidance on the issue of waste and by-products (<http://ec.europa.eu/environment/waste/strategy.htm>), whilst the scientific methodology for the definition of end of waste criteria will be examined by the Joint Research Centre (JRC) under the non-waste project.

The EU Environment Council voted on proposals to revise the bloc's waste management rules in June 2007, voting for a five-step waste hierarchy, prioritising prevention, reuse, and recycling ahead of energy recovery and disposal. The hierarchy is as follows:

- 1 -Waste prevention
- 2 – Re-use
- 3 - Recycling
- 4 - Energy recovery
- 5 - Disposal

Although the question of whether to re-classify waste-to-energy incinerators proved an initial sticking point with Member States having “diametrically opposing” views, Ministers eventually approved the re-classification together with the European Commission’s original efficiency calculation. Concessions regarding Member States’ ability to limit incoming and outgoing shipments of waste were also agreed.

Currently, the Commission is preparing guidelines in the application of life cycle thinking to biodegradable waste management policies. The JRC is assisting DG Environment with this task. (For more information see: <http://viso.jrc.it/lca-biowaste/>)

Overall, despite its breadth, there are some key issues that the Thematic Strategy fails to address. For example, the re-classification of waste incineration has given it a “cleaner” image, which is contradictory given the dangers that emissions from incinerators pose to human health. There is also a lack of measures primarily aimed at promoting recycling, and the Strategy does not foresee further landfill bans.

A review of the Thematic Strategy is planned for 2010, at which time additional measures needed to promote waste prevention and in the application of life-cycle thinking will be identified.

## Hazardous Waste

Clearly hazardous waste poses a greater threat to the environment and human health than non-hazardous waste. It is strictly regulated by the Hazardous Waste Directive. The Directive does several things. Firstly, it lays down the properties that render waste hazardous, which are further specified by the Waste List Decisions. Secondly, it requires record keeping and monitoring, and establishes control obligations for the entire waste life-cycle, that is, from the waste producer to the final disposal or recovery, also known as “cradle to grave”. Thirdly, it requires strict attention be paid to the mixing of different categories of hazardous wastes, or mixing with non-hazardous wastes.

The Landfill Directive sets strict standards for the waste that can be accepted into landfills, of which there are three types: landfills for hazardous waste, non-hazardous waste and inert waste. Hazardous waste going into landfill must meet waste acceptance criteria (WAC), which establish leaching and other limit values that the hazardous waste must meet.

For more information see: [http://ec.europa.eu/environment/waste/hazardous\\_index.htm](http://ec.europa.eu/environment/waste/hazardous_index.htm)

## 2) International Organizations

Contracted by the European Environment Agency the European Topic Centres (ETCs) are centres of thematic expertise that carry out specific tasks identified in the EEA strategy and annual management plans. The European Topic Centre on Resource and Waste Management, established in 1997 is one of the five ETCs currently in existence. The ETC/RWM is a consortium of seven specialist organisations, which has as its aim to provide reliable and comparable data and information on resource and waste management in Europe to decision-makers and the public.

More information available at: <http://waste.eionet.europa.eu/>

### OECD

With regard to waste, the OECD is developing policies and tools in the following areas:

- Sustainable Materials Management (SMM)

- Environmentally Sound Management of Waste (ESM)
- Transboundary Movements of Waste
- Waste Prevention and Minimisation

For more information see:

[http://www.oecd.org/about/0,3347,en\\_2649\\_34395\\_1\\_1\\_1\\_1\\_37465,00.html](http://www.oecd.org/about/0,3347,en_2649_34395_1_1_1_1_37465,00.html)

### 3) International Instruments

#### **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal** ([www.basel.int/](http://www.basel.int/))

Because hazardous wastes pose such a potential threat to human health and the environment, one of the guiding principles of the Basel Convention is that, in order to minimize the threat, hazardous wastes should be dealt with as close to where they are produced as possible. Therefore, under the Convention, transboundary movements of hazardous wastes or other wastes can take place only upon prior written notification by the State of export to the competent authorities of the States of import and transit (if appropriate).

A central goal of the Basel Convention is “environmentally sound management” (ESM), the aim of which is to protect human health and the environment by minimizing hazardous waste production whenever possible. ESM means addressing the issue through an “integrated life-cycle approach”, which involves strong controls from the generation of a hazardous waste to its storage, transport, treatment, reuse, recycling, recovery and final disposal.

#### 3.1.8. Water Quality and Health

WHO estimates that around 6% of the global burden of disease is related to water, with infectious diarrhoea being the largest component (accounting for about 70%, or 1.7 million deaths per year). Better management of water and sanitation would therefore prevent over 30 million cases of water-related disease per year in the European Region.

## 1) EU Policy

### Water Framework Directive

The Water Framework Directive (WFD), adopted in 2000, sets out a framework for the planning and management of water resources within river basin districts, rather than administrative units. Its major objective is to achieve a “good water” status for all waters, including surface, coastal, transitional and ground waters by the year 2015

([http://europa.eu.int/comm/environment/water/water-framework/index\\_en.html](http://europa.eu.int/comm/environment/water/water-framework/index_en.html)).

A report on the implementation of the WFD was published in 2007 ([http://ec.europa.eu/environment/water/water-framework/implrep2007/index\\_en.htm](http://ec.europa.eu/environment/water/water-framework/implrep2007/index_en.htm)).

### Surface Water

The principal Community strategy against pollution of rivers, lakes and coastal waters, known as surface water, is set out in Article 16 of the WFD, which requires that specific measures against pollution of water be established. In accordance with this requirement, a list of 33 priority hazardous substances has been created, representing the basis for community-wide water quality standards and emission controls.

The substances on the priority list are mainly pollutants found in water, which represent a risk for the aquatic environment but also for human health (human toxicity via aquatic exposure routes). The list includes existing chemicals, plant protection products, biocides, metals and other groups like Polyaromatic Hydrocarbons (PAH) that are mainly incineration by-products and Polybrominated Biphenylethers (PBDE) that are used as flame retardants.

In May 2007 MEPs voted to increase the number of substances on the list to include 28 other heavy metals and hazardous pesticides and asked the Commission to come up with a new list no later than 12 months after the directive comes into force. MEPs also introduced an amendment requiring the Commission to put forward a proposal to protect biotas such as living fish.

In June 2007, however, the Environment Council rejected the European Parliament’s request to add problem pollutants to the European Commission’s initial list of 33 priority substances. Provisions to reduce pollution at the source were also altered.

For more information see: <http://www.europarl.europa.eu/oeil/file.jsp?id=5372272>

To follow the progress on the Procedure file for “Water Policy: establishment of environmental quality standards”, see the Legislative Observatory of the European Parliament at: <http://www.europarl.europa.eu/oeil/file.jsp?id=5372272>

For more information on the European Commission activities relating to water quality and health please see: (<http://europa.eu.int/comm/environment/water/index.html>)

### **Groundwater**

In accordance with Article 17 of the WFD, in 2006 the Commission adopted a new Groundwater Directive, which sets underground water quality standards and establishes measures to limit or prevent inputs of pollutants into groundwater ([http://ec.europa.eu/environment/water/water-framework/groundwater/policy/current\\_framework/new\\_directive\\_en.htm](http://ec.europa.eu/environment/water/water-framework/groundwater/policy/current_framework/new_directive_en.htm)). Under this Directive, groundwater quality standards need to be established by 2008.

### **Drinking Water and Bathing Water**

In addition to the WFD, two further Directives exist relating specifically to water and health: the Drinking Water Directive ([http://ec.europa.eu/environment/water/water-drink/index\\_en.html](http://ec.europa.eu/environment/water/water-drink/index_en.html)), the objective of which is to protect the health of EU consumers, and the Bathing Water Directive, recently revised and re-adopted in 2006 ([http://ec.europa.eu/water/water-bathing/index\\_en.html](http://ec.europa.eu/water/water-bathing/index_en.html)). The former sets standards for common substances that can be found in drinking water, and requires Member States to monitor the quality of their water and report to the Commission at three yearly intervals. The new Bathing Water Directive sets standards for the classification of bathing sites, which can be judged “excellent”, “good”, “sufficient” or “poor”, and lays down provisions for monitoring. It also requires Member States to draw up management plans for each site and provides for public participation and information.

Further directives dealing with water quality and health include the Urban Waste Water Directive, designed to protect the water environment from the adverse effects of discharges of urban waste water and from certain industrial discharges; the IPPC Directive, aimed at minimising pollution from various industrial sources throughout the European Union; and the forthcoming directives on the Marine Environment and Flood Management, both of which are at the proposal stage of the decision-making process, and have an indirect impact on health.



Other initiatives at the EU level include the DG Research led - Water for Life Initiative ([http://europa.eu.int/comm/research/water-initiative/index\\_en.html](http://europa.eu.int/comm/research/water-initiative/index_en.html)), Environment for Young Europeans ([http://europa.eu.int/comm/environment/youth/water/index\\_en.html](http://europa.eu.int/comm/environment/youth/water/index_en.html)) and the related activities of the European Environmental Agency ([http://themes.eea.eu.int/Specific\\_media/water](http://themes.eea.eu.int/Specific_media/water)). Of note, the EEA covered the issue of hazardous substances in the European marine environment (trends in metals and persistent organic pollutants) in a report published in 2003 ([http://reports.eea.eu.int/topic\\_report\\_2003\\_2/en](http://reports.eea.eu.int/topic_report_2003_2/en)).

Finally, in 2007, the Water Information for Europe was launched, a web portal providing the public with information on water and water-related topics including bathing, water quality data, and information on urban wastewater treatment sites (<http://water.europa.eu/>).

## 2) International Organizations

### WHO

The WHO runs various projects and sets guidelines for water under its Programme on Water Sanitation and Health ([http://www.who.int/water\\_sanitation\\_health/index.html](http://www.who.int/water_sanitation_health/index.html)).

## 3) International Instruments

### WHO UNECE Protocol on Water and Health

([http://www.euro.who.int/watsan/WaterProtocol/20030523\\_1](http://www.euro.who.int/watsan/WaterProtocol/20030523_1))

The international legal instrument to approach the problems of water-related diseases is the WHO UNECE Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (<http://www.unece.org/env/water/welcome.html>). It was adopted in 1999 at the Third Ministerial Conference on Environment and Health and its objective is to “promote at all appropriate levels...the protection of human health and well-being... through improving water management...and through preventing, controlling, and reducing water-related disease”. Signatories undertook to establish and maintain comprehensive national and/or local surveillance and early warning systems to prevent, and respond to, water-related diseases.

### Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention) and Protocol

([http://www.imo.org/home.asp?topic\\_id=1488](http://www.imo.org/home.asp?topic_id=1488))

Agreed in London 1992, the aim of the Convention was to control pollution of the sea by dumping of wastes that could create hazards to human health, harm living resources and marine life, and damage amenities. The Convention covers the disposal at sea of wastes and other matter from vessels, aircraft, and extends its scope to “all marine waters other than internal waters”.

In 2004, the Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972, (London Protocol) entered into force, modernizing and replacing the London Convention. The Protocol also prohibits all dumping except for acceptable wastes on the “reverse list”.

#### **Oslo Convention on the North East Atlantic (OSPAR)** (<http://www.ospar.org/>)

The 1992 OSPAR Convention guides cooperation on the protection of the marine environment of the North-East Atlantic. The Convention is an up-date and combination of the 1972 Oslo Convention on dumping of waste at sea and the 1974 Paris Convention on land-based sources of marine pollution. The OSPAR Commission manages the convention, the work of which is organised under six strategies: Protection and Conservation of Marine Biodiversity and Ecosystems; Eutrophication; Hazardous Substances; Offshore Oil and Gas Industry; Radioactive Substances; Monitoring and Assessment.

#### **Helsinki Convention on the Protection of the Marine Environment of the Baltic Sea Area** (<http://www.helcom.fi/>)

The Helsinki Convention, managed by the Helsinki Commission, aims to protect the environment of the Baltic Sea from pollution through cooperation between Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia, Sweden, and the European Community.

### 3.1.9. Noise

Increasingly, noise is seen not only as a nuisance but also as a health hazard. The health significance of noise pollution includes both physical problems and psychological effects. For example, frequent exposure to high levels of noise, such as in the workplace can have both immediate and long-term effects on hearing. Exposure to elevated sound levels is thought to cause significant hearing loss in approximately 10% of the population in industrialised countries.<sup>17</sup>

<sup>17</sup> Rosenhall, Ulf; Pedersen, Kai; Svenborg (August 1990): Alvar Presbycusis and Noise-induced hearing loss, Ear & Hearing 11(4):257-263, Lippincott, Williams & Wilkins.

Noise pollution can also cause headaches, dizziness, high blood pressure, nervousness and stress. It can also lead to stomach ulcers, loss of concentration, and sleeping problems. The latter is very clearly linked to well being. Long term sleep disturbances cause tiredness and reduce concentration, which in turn decreases productivity and can damage physical and mental health.

Results from epidemiological studies suggest that noise may also contribute to heart disease by causing blood vessels to constrict, the effects of which can accumulate over the years. A study by the German Federal Environment Agency estimated that 27,000 cases of ischemic heart disease in Germany, including 4000 heart attack cases per year are attributable to road traffic noise alone.<sup>18</sup>

Noise pollution can also increase the risk of accidents as a result of interference with warning alarms or shouts and when the effect on sleep patterns affects concentration.

The general consensus about the noise levels which cause health impacts are as follows:<sup>19</sup>

- Environmental noise above 40-50dBA Leq is likely to lead to significant annoyance.
- Noise levels between 65-70 dBA Leq may be risk factors for school performance and ischemic heart disease.
- Outdoor noise levels of 40-60 dBA Leq may disturb sleep.
- Traffic noise of 70dB(A) may cause hearing impairment. (Traffic or any?)

## 1) EU Policy

According to the European Commission around 20% of the European Union's population, close to 80 million people, suffer from noise levels that scientists and health experts consider unacceptable. An additional 170 million citizens are living in so-called "grey areas" where the noise levels are such as to cause serious annoyance during the daytime.

Prior attempts by the Community to tackle this problem resulted in legislation fixing maximum sound levels for vehicles, aeroplanes and machines. However, data covering the past 15 years failed to show significant improvements in exposure to environmental noise especially road traffic noise. The Commission therefore decided that a different approach to noise abatement policy was needed.

<sup>18</sup> Babisch, W. (2006) "Transportation noise and cardiovascular risk, Review and synthesis of epidemiological studies, Dose-effect curve and risk estimation" WaBuLu-Hefte01/06, Umweltbundesamt, Berlin.

<sup>19</sup> Babisch, W. Internoise presentation, 2006

Further to its 1996 Green Paper, the European Commission developed a new framework for noise policy (<http://europa.eu.int/comm/environment/noise/home.htm>) based on shared responsibility between the EU, national and local levels. It includes measures to improve the accuracy and standardisation of data to help improve the coherency of different actions. The new noise framework led to a comprehensive set of measures, including:

1. The creation of a Noise Expert Network, in 1998, whose mission is to assist the Commission in the development of its noise policy (<http://ec.europa.eu/environment/noise/expert.htm>).
2. The Directive on Environmental Noise aimed at requiring competent authorities in Member States to produce strategic noise maps on the basis of harmonised indicators, to inform the public about noise exposure and its effects, and to draw up action plans to address noise issues.

This was followed by European Parliament and Council Directive 2002/49/EC ([http://eur-lex.europa.eu/pri/en/oj/dat/2002/l\\_189/l\\_18920020718en00120025.pdf](http://eur-lex.europa.eu/pri/en/oj/dat/2002/l_189/l_18920020718en00120025.pdf)), adopted on the 25 June 2002, whose main aim is to provide a common basis for tackling the noise problem across the EU. The underlying principles of this text are similar to those for other overarching environment policy directives:

- Monitoring the environmental problem, by requiring competent authorities in Member States to draw up "strategic noise maps". These maps will be used to assess the number of people annoyed and sleep-disturbed respectively throughout Europe
- Informing and consulting the public about noise exposure, its effects, and the measures considered to address noise, in line with the principles of the Aarhus Convention
- Addressing local noise issues by requiring competent authorities to draw up action plans to reduce noise where necessary and maintain environmental noise quality where it is good.

- Developing a long-term EU strategy, which includes objectives to reduce the number of people affected by noise in the longer term and provides a framework for developing existing Community policy on noise reduction from source. In this respect, the Commission has made a declaration ([http://eur-lex.europa.eu/pri/en/oj/dat/2002/l\\_189/l\\_18920020718en00260026.pdf](http://eur-lex.europa.eu/pri/en/oj/dat/2002/l_189/l_18920020718en00260026.pdf)) concerning the provisions laid down in article 1.2 with regard to the preparation of legislation relating to sources of noise.

In addition to this there are several specific noise directives. Much noise comes from transport sector, cars, lorries, and aeroplanes etc. A good overview of EU regulation in regarding noise and the transport sector can be found at <http://www.transportenvironment.org> the European Federation for Transport and the Environment. There is also a Directive on Equipment Used Outdoors (Directive 2000/14/EC) ([http://europa.eu.int/comm/enterprise/mechan\\_equipment/noise/index.htm](http://europa.eu.int/comm/enterprise/mechan_equipment/noise/index.htm)) aimed at simplifying legislation regarding noisy equipment.

The Commission has initiated the follow-up and development of existing EU legislation relating to sources of noise, such as motor vehicles, aircraft, railway rolling stock and the provision of financial support to different noise related studies and research projects. Information on ongoing activities related to the Environmental Noise Directive can be found at: <http://europa.eu.int/comm/environment/noise/home.htm#5>.

Finally the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) was recently (2007) asked to assess the potential health risks posed by noise caused by devices such as personal music players and mobile phones. Currently, the safety of this equipment is regulated by the Radio and Telecommunications Terminal Equipment Directive, the Low Voltages Directive, and the General Product Safety Directive. For more information see:

[http://ec.europa.eu/health/ph\\_risk/committees/04\\_scenihhr/docs/scenihhr\\_q\\_011.pdf](http://ec.europa.eu/health/ph_risk/committees/04_scenihhr/docs/scenihhr_q_011.pdf).

## 2) International Organizations

### WHO

The WHO programme on noise and health (<http://www.who.dk/Noise>) reviews the main health effects on noise from a dose-effect perspective and identifies the needs of specific vulnerable groups.

Under its noise and health programme the WHO has produced guidelines for Community Noise (<http://whqlibdoc.who.int/hq/1999/a68672.pdf>) and is developing guidelines on Night Noise ([http://www.euro.who.int/Noise/activities/20040721\\_1](http://www.euro.who.int/Noise/activities/20040721_1))

### 3) International Instruments

#### CEHAPE

Children are particularly vulnerable to effects of noise pollution. It is widely agreed that chronic exposure to environmental noise leads to impaired cognitive function and health in children.

Within the Children's Environment and Health Action Plan for Europe ([http://www.euro.who.int/childhealthenv/Policy/20020724\\_2](http://www.euro.who.int/childhealthenv/Policy/20020724_2)), Regional Priority Goal IV contains a commitment to reducing the risk of disease and disability arising from excessive noise. Further to this, the CEHAPE Table of Actions (<http://www.euro.who.int/document/che/edoc08.pdf>) cites the need to prevent and reduce exposure to hazardous and disruptive noise and noise injuries.

For more information on noise:

- Directorate-General Environment noise homepage (<http://ec.europa.eu/environment/noise/>)
- WHO Noise Homepage (<http://www.euro.who.int/Noise>)
- Directorate-General Health and Consumer Protection ([http://ec.europa.eu/consumers/index\\_en.htm](http://ec.europa.eu/consumers/index_en.htm))
- European Environment Agency Noise homepage ([http://themes.eea.eu.int/Environmental\\_issues/noise](http://themes.eea.eu.int/Environmental_issues/noise))
- TERM Reports (Transport and Environment Reporting Mechanism) ([http://reports.eea.europa.eu/eea\\_report\\_2007\\_1/en/eea\\_report\\_1\\_2007.pdf](http://reports.eea.europa.eu/eea_report_2007_1/en/eea_report_1_2007.pdf))
- EU research projects CALM network (<http://www.calm-network.com/>)
- EU research projects CALM database ([http://www.calm-network.com/index\\_database.htm](http://www.calm-network.com/index_database.htm))
- PINCHE (2002-2005) Policy interpretation network on children's health and environment (<http://www.pinche.hvdgm.nl/>)
- IMAGINE (2003-2006) Integrated environmental noise database (<http://www.imagine-project.org/>)

- Urban Audit, measures quality of life in towns and cities ([http://www.transportenvironment.org/www.europa.eu.int/comm/regional\\_policy/urban2/urban/audit/src/intro.html](http://www.transportenvironment.org/www.europa.eu.int/comm/regional_policy/urban2/urban/audit/src/intro.html))
- Gipsynoise (<http://www.gipsynoise.org/>)

### 3.1.10. Injuries and Accidents

Injuries, defined as bodily lesions, are a leading cause of death among Europeans. Injuries and accidents can occur in the home, during leisure activities and sports, road transportation, in the workplace, and in connection with consumer services and products.

Every year about 235,000 citizens of the Member States die as a result of an accident or violence. Injuries also constitute a large financial burden on the public health care and welfare system.

In Europe injuries represent:

- The leading cause of deaths among children, adolescents and young adults
- A major cause of disability. Often survivors of severe injuries suffer lifelong impairment
- A significant health care burden. Injuries account for about 6.8 million hospital admissions, representing 11% of all hospital admissions in the EU and costing about 13 billion Euro a year
- A major detriment to productivity. About 8% of retirements on grounds of disability and 20% of all sick leaves the result of injuries.

Unlike other causes of illness or premature death, injuries can be prevented by ensuring that our living environment is safe. There exists a clear relationship between rates of accidents and injuries and policy relating to the physical environment. For example, road traffic injuries are linked to urban transport, land use patterns and recreation areas.

The European injury epidemic has a significant impact on productivity, health, and well-being in the Community. To address the large social toll, a number of initiatives have been taken to reduce the frequency of injuries and accidents. Examples of successful schemes in Member States include: car safety belts, child resistant cigarette lighters, safety boots for construction sites, and legislation against intimate partner violence.

## 1) EU Policy

Over the past 20 years, EU internal market legislation has contributed to the safety of a number of consumer products – addressed in the following chapter. However, coordinated Commission injury and accident prevention activities really only began in 1999 with the framework of the Injury Prevention Programme (IPP). Under the IPP, the Injury Data Base IDB was established and over 80 projects ([http://ec.europa.eu/health/ph\\_projects/injury\\_project\\_full\\_listing\\_en.htm](http://ec.europa.eu/health/ph_projects/injury_project_full_listing_en.htm)) aimed at advancing injury prevention were undertaken in the period from 1999 – 2002. The IPP has since evolved into a specific priority in the 2003-2008 Public Health Action Programme, with injury prevention continuing under the “Health Information Strand”.

Today, the principal injury related policies and activities at EU level can be found under the Public Health Action Programme in the form of the “Commission Communication on actions for a Safer Europe”

([http://ec.europa.eu/health/ph\\_determinants/environment/IPP/documents/com\\_328\\_en.pdf](http://ec.europa.eu/health/ph_determinants/environment/IPP/documents/com_328_en.pdf)),

and the Proposal for a Council Recommendation on the Prevention of Injuries and the Promotion of Safety

([http://ec.europa.eu/health/ph\\_determinants/environment/IPP/documents/com\\_329\\_en.pdf](http://ec.europa.eu/health/ph_determinants/environment/IPP/documents/com_329_en.pdf)).

These documents were adopted by the Commission in June 2006.

The Communication objective is to move the issue of accidents and injuries up the political agenda. It highlights the role of the health sector in three major areas: quantifying the size and impact of injuries, disseminating evidence-based strategies, and outreach and capacity-building. It suggests:

- Development of an EU Injury Information System (IDB): providing comprehensive information on the magnitude of the problem. It will combine injury data from health statistics from a wide range of sources and enable stakeholders to assess the health burden of injuries and to compare risks between different countries. It will identify risk factors and measure progress in the achievement prevention plan targets.
- Support exchange of good practice: in order to avoid duplication of good work and disseminate information on successful prevention measures undertaken in different sectors like public health, transport, workplace, welfare, and education.



- Capacity-building: including setting up an EU network of stakeholders such as health professionals, medical doctors, rescue and emergency staff to provide advice on injury prevention; and providing vocational training to welfare professionals, teachers, architects, sales staff and service providers on hazards and safety measures.
- Preparation of national action plans: member states are recommended to create a framework of actions relating to injury prevention.
- Risk communication: Information campaigns to raise the people's awareness of certain hazards and inform them about the benefits of safety measures to enable them to make safer choices.

The 2006 Proposal for a Council Recommendation on the Prevention of Injuries and the Promotion of Safety is a first step towards reducing injury-related health care costs, combining the efforts of Member States with those of the Commission for a safer Europe. It was adopted in June 2007.

Also related to accidents and injuries is the Working Party on Accidents and Injuries (WP-AI) ([http://europa.eu.int/comm/health/ph\\_information/implement/wp/injuries/injuries\\_en.htm](http://europa.eu.int/comm/health/ph_information/implement/wp/injuries/injuries_en.htm)) established in November 2003. The main function of the WP-AI is to provide a forum for discussion and information exchange on injury prevention. It will also contribute to the development of a sustainability injury surveillance system (Injury Database). The WP-AI will continue for the duration of the work programme (2003-2008).

Other groups dealing with accidents and injuries include the CEN Committee (<http://www.cen.eu/cenorm/homepage.htm>) and CENELEC (<http://www.cenelec.org/Cenelec/About+CENELEC/default.htm>), both of which set safety standards for products. DG Transport also has a programme called CARE ([http://ec.europa.eu/transport/roadsafety/road\\_safety\\_observatory/care\\_en.htm](http://ec.europa.eu/transport/roadsafety/road_safety_observatory/care_en.htm)) that measures injuries caused by road accidents, runs the European Safety Charter (<http://ec.europa.eu/transport/roadsafety/charter.htm>), and has an independent group of experts on accidents in the transport sector. ([http://ec.europa.eu/transport/accidents\\_experts/index\\_en.htm](http://ec.europa.eu/transport/accidents_experts/index_en.htm))

At present 'Accidents and injuries' are not considered within the scope of the Commission's Environment and Health Action Plan. Nevertheless, the Commission is working with several DGs on this cross cutting issue, in particular with regard to transport, workplace, mental health, violence, alcohol, and child health.

### **EU Injury Database (IDB)**

The internet-based database set up by DG SANCO is a database on non-fatal home, leisure and sports accidents, previously called the European Home and Leisure Surveillance system EHLASS. Nine Member States participate in the IDB.

For more information: <https://webgate.cec.eu.int/idb>

### **European Association for Injury Prevention and Safety Promotion – EuroSafe**

This is a network of experts and expert organisations dedicated to making Europe a safer place. The summer of 2007 will see the beginning of the EuroSafe Phase project, the objectives of which are to enhance injury data exchange and use at Community level for injury prevention.

For more information: <http://www.eurosafe.eu.com/csi/eurosafe2006.nsf>

Further information on accidents and injuries:

[http://europa.eu.int/comm/health/ph\\_determinants/environment/IPP/ipp\\_en.htm](http://europa.eu.int/comm/health/ph_determinants/environment/IPP/ipp_en.htm)

## **2) International Instruments**

### **Convention on the Transboundary Effects of Industrial Accidents**

Signed in 1992, the Convention came into effect in 2000 and aims to protect humans and the environment against industrial accidents. The Convention promotes international cooperation to help prevent such accidents and to prepare for them, and to mitigate and manage their effects if and when they occur. It also encourages parties to cooperate on research and development, and share information and technology.

For more information: <http://www.unece.org/env/teia/welcome.htm>

## **3) International Organizations**

### **WHO**

In relation to accidents and injuries, the WHO provides information on several key areas. These include: Child injuries and violence, burns, drowning, falls, and South Asia earthquakes and tsunamis ([http://www.euro.who.int/violenceinjury/about/20050208\\_1](http://www.euro.who.int/violenceinjury/about/20050208_1)).

The various programmes and publications related to accidents and injuries in the European region are summarised below.

- In 2005 the WHO Regional Committee for Europe passed a resolution on “Injuries in the WHO European Region: burden, challenges and policy response” ([http://www.euro.who.int/violenceinjury/network/20050429\\_1](http://www.euro.who.int/violenceinjury/network/20050429_1)).
- The WHO has a European network of national focal points (NFPs) ([http://www.euro.who.int/violenceinjury/network/20060124\\_1](http://www.euro.who.int/violenceinjury/network/20060124_1)) for violence and injury prevention, which support, in collaboration with the WHO, the implementation of the resolution addressing priorities to reduce the burden from unintentional injuries and violence. The Third Meeting of the NFPs was held in November 2007.
- In relation to road traffic injuries the WHO undertakes a series of prevention activities that include the WHO helmet initiative, which involves the preparation of manuals for good practice and road safety training manuals, and collaboration with road safety advocacy NGOs. In 2004, the WHO passed a resolution on road safety, the World Health Assembly Resolution WHA57/10 on road safety and health (2004) ([http://www.who.int/gb/ebwha/pdf\\_files/WHA57/A57\\_R10-en.pdf](http://www.who.int/gb/ebwha/pdf_files/WHA57/A57_R10-en.pdf)).
- Injury prevention is also addressed by the Children’s Environment and Health Action Plan for Europe (CEHAPE), under regional priority goal (RPG) II, accidents and injuries:

“We aim to prevent and substantially reduce health consequences from 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.”

### Country Experience: the Netherlands

In 1981 the Netherlands began a programme to tackle accidental poisoning of children by household chemicals and pharmaceuticals because children under five years of age were suffering a relatively high number of unintentional poisonings. Legislation was introduced as part of the commodities act requiring child-resistant packages for household chemicals and pharmaceuticals. As a result of the measures introduced, a 1988 evaluation showed a 50% decrease in hospitalization from poisoning. The Netherlands now has the lowest number of accidental poisonings in Europe.

[http://www.euro.who.int/features/2006/featureinj06/20060620\\_8](http://www.euro.who.int/features/2006/featureinj06/20060620_8)

### 3.1.11. Consumer Safety

Every day people around the world consume, or come into contact with, countless different products. Unfortunately, these products are not always safe and cause accidents and other health problems. The most common dangers are the risk of injuries, electric shock, and fire or burns. Consumers must be confident that the products they use or come into contact with do not present a danger to their health.

#### 1) EU Policy

Promoting consumer health and safety is enshrined in articles 153 and 95 of the Treaty establishing the European Community. In order to protect the health of the 493 million consumers in the EU, the Commission has adopted several pieces of legislation pertaining to product safety. In 1992 the EU put in place general product requirements under the General Product Safety Directive (GPSD) to ensure the safety of all non-food products, such as toys, household appliances, cars and cosmetics. This was complemented by a rapid alert network, RAPEX (Rapid Alert System for Non-Food Products) that can be activated across the EU when a dangerous product is identified. The revised GPSD came into force in 2001. A General Product Safety Directive (GPSD) Committee delivers opinions on draft Commission decisions relating to products that present a serious risk, and on amendments to the Annex to the Directive.

For certain products, specific safety rules are laid down. Directives for Medical Devices, Machinery Safety, Toy Safety, Pharmaceuticals and Cosmetics, amongst others are administered by the Commission's Directorate General for Enterprise and Industry (<http://www.newapproach.org/Directives/DirectiveList.asp>).

In addition to this, there exist voluntary Europe-wide safety standards recognised by the European Commission. These are developed by CENELEC (European Committee for

Electrotechnical Standardisation) (<http://www.cenelec.org/Cenelec/Homepage.htm>), ETSI (European Telecommunications Standards Institute) (<http://www.etsi.org/>), and CEN (European Committee for Standardisation) (<http://www.cenorm.be/cenorm/index.htm>). The EU also supports market surveillance such as sample testing and safety checks.

Most recently, in March 2007, the Commission adopted a Consumer Policy Strategy for the years 2007-2013. The programme, which lists 11 actions, has as its principle objectives:

- To ensure a high level of consumer protection
- To ensure the effective application of consumer protection rules through better cooperation between authorities and organizations responsible for consumer legislation, information, education and dispute resolution complaints

For more information: [http://ec.europa.eu/consumers/index\\_en.htm](http://ec.europa.eu/consumers/index_en.htm)

### **Unsafe Products**

If a product on the European market is unsafe and poses a serious risk to consumers there are several courses of action that can be taken at the EU level. To begin with, RAPEX will ensure that information about a dangerous item is quickly circulated between Member States and the Commission. Following this, under certain conditions, the Commission may take a Decision to require Member States to ban the marketing of an unsafe product, to recall it from consumers or to withdraw it from the market. To date, two such Decisions have been made: a Decision on Phthalates, six of which have been temporarily banned in toys and childcare articles; and a Decision on lighters requiring Member States to ensure that cigarette lighters are child resistant.

### **EIS-CHEMRISKS project**

In response to the universal agreement amongst experts and policy makers that there is a significant lack of knowledge on human exposure to chemicals, the Directorate-General for Health and Consumer Protection, in collaboration with the Commission's Joint Research Centre, launched the EIS-CHEMRISKS - The European Information System on "Risks from chemicals released from consumer products/articles project". The EIS-CHEMRISKS action plan will focus on the following:

- Drawing up inventories
- Harmonising national data sources and exposure assessment models

- Setting up information exchange procedures for identifying and assessing emerging issues
- Developing a European data base on human exposure factors and assessing state-of-the-art approaches to exposure assessment.

For more information see: <http://web.jrc.ec.europa.eu/eis-chemrisks/index.cfm>

### European Union Eco-label

[http://ec.europa.eu/environment/ecolabel/index\\_en.htm](http://ec.europa.eu/environment/ecolabel/index_en.htm)

The European Eco-Label is a voluntary scheme designed to provide consumers with a guide to more environmentally-friendly products and services, and to encourage businesses to market products and services that are kinder to the environment. Using a flower as its symbol, the scheme is based on the idea of greening non-food products across Europe and is now part of a wider approach to Integrated Product Policy (IPP).



The Community Eco-label is awarded to products and services with reduced environmental impacts, such as certain paper products, textiles, detergents, paints, and some appliances such as certain refrigerators and dishwashers. The criteria for assessing each product group are defined on the basis of life cycle considerations (LCC), which means that the entire life cycle of product or service is examined in detail, from extraction of the raw materials through to production, distribution, use and disposal.

### EEC-NET

The European Consumer Centres Network (EEC-Net) is an EU-wide network that advises citizens on their rights as consumers. The objective of EEC-Net is to provide consumers with a range of services, such as easy access to redress, information, advice and assistance, thereby promoting consumer confidence.

For more information see: [http://ec.europa.eu/consumers/redress/ecc\\_network/index\\_en.htm](http://ec.europa.eu/consumers/redress/ecc_network/index_en.htm)

## 2) International Organisations

### OECD

Through the Committee on Consumer Policy (CCP), the OECD addresses a wide range of issues relevant to consumers. Key areas of work include:

- Building consumer trust in the digital economy
- Impact of new technologies and emerging business practices on consumers
- Examining consumer policy regimes

For more information see:

[http://www.oecd.org/department/0,3355,en\\_2649\\_34267\\_1\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/department/0,3355,en_2649_34267_1_1_1_1_1,00.html)

### International Consumer Product Safety Committee (ICPSC)

The ICPSC is a platform to facilitate the exchange of information on issues relating to consumer product safety issues, and thereby strengthen inter-governmental collaboration and cooperation.

### International Consumer Protection Enforcement Network

This organisation is made up of trade practices' law enforcement authorities and has as its aim to encourage international cooperation among law enforcement agencies, and the sharing of information on cross-border commercial activities that may affect consumer interests.

For more information see: <http://icpen.org/>

### Globally Harmonised System of Classification and Labelling of Chemicals (GHS)



Currently, all over the world the same chemicals are labelled and classified differently, depending on where they are made. The GHS system of classifying and labelling chemicals was developed by a group of experts brought together by the UN, and will replace the existing European CPL Directives 67/548/EEC (substances) and 99/45/EC (preparation) with one regulation. It is hoped the system will eliminate confusion, potential errors and misunderstandings that arise from having different classification and labelling systems.

The internationally agreed system is encompassed within what is known as the “Purple book” ([http://www.unece.org/trans/danger/publi/ghs/ghs\\_rev01/01files\\_e.html](http://www.unece.org/trans/danger/publi/ghs/ghs_rev01/01files_e.html)), first published in 2003, revised in 2005, and most recently in 2007. At the 2002 World Summit it was agreed that the GHS should be implemented worldwide by 2008.

For more information please see:

[http://www.unitar.org/cwg/publications/cbl/synergy/pdf/cat3/ghs/ghs\\_en.pdf](http://www.unitar.org/cwg/publications/cbl/synergy/pdf/cat3/ghs/ghs_en.pdf)

### 3.1.12. Transport

Transport is a vital part of modern life. However, whilst on the one hand it facilitates access to jobs, education, leisure activities and other services, it also detrimentally impacts on the health of the whole of the population both directly and indirectly. The main health effects associated with transport include injuries from road traffic accidents, respiratory problems due to air pollution, rising levels of obesity due to reduced physical activity, and noise annoyances. Transport emissions are also one of the major contributors to climate change, which has consequences for human health resulting from extreme weather events and changing patterns of disease.

According to the WHO, in the European Region traffic accidents cause 120,000 deaths a year, a third of them among people under 25 years old, whilst transport-related air pollution is estimated to result in 40,000-130,000 deaths a year in urban adults. Regarding air pollution, particulate matter (PM) is of particular concern. Made up of fine particles containing microscopic solid or liquid droplets, PM penetrates deep into the lungs where it causes serious health problems.

Whilst road traffic can be labelled the most significant source of air pollutants of concern, 65% of people in the European Region also suffer from sleep deprivation, speech interference and annoyance largely due to traffic noise.



Additionally, the expansion of motorized transport has been accompanied by a decline in physical activity, which in developed countries is now the second most important risk factor for ill health, after smoking. Regular physical activity is demonstrated to have positive effects on health. For example, it has been shown to increase life expectancy, help reduce the risks of cardiovascular disease, stroke, hypertension, diabetes II, obesity, some forms of cancer, osteoporosis and depression, and helps increase independence in old age. However, 30% of adults are now insufficiently active during a normal week. Consequently, the WHO estimates that in the European Region the total number of deaths attributable to physical inactivity is around 600,000 per year (5-10% of total mortality). Worldwide, physical inactivity is the attributed cause for approximately 1.9 million deaths and 19 million Disability Adjusted Life Years (DALYs).

Physical inactivity has in turn lead to an increase in obesity of between 10% and 40% in the last two decades.

Sadly, excess body weight is now the most common childhood disorder in Europe, affecting on average one child in six. In some countries, as many as one child in three is obese.

Excess body weight in children is associated with hypertension, orthopaedic problems, sleep apnoea (i.e. interruptions of breathing during sleep), adverse blood lipid profiles (i.e. increase in “bad” and decrease in “good” blood cholesterol levels) psychological ill health, and Type 2 diabetes, which until recently regarded as a weight-related disease of old age.

To prevent the negative effects of transport systems on health, it is now widely recognised that sustainable transport strategies need to promote environmental protection and physical activity, notably cycling and walking.

## 1) EU Policy

DG Environment has a subsection (<http://europa.eu.int/comm/environment/air/transport.htm>), which examines various transport-related topics and Directives including:

- Road vehicles
- Fuel quality monitoring
- Renewable fuels
- Pollutant emissions from ships

- Non-road mobile machinery
- Developing a sustainable transport system
- Decoupling of transport growth from GDP growth
- Transport through sensitive areas

For more information see: <http://ec.europa.eu/environment/air/transport.htm>

The Commission also has a Directorate for Transport ([http://europa.eu.int/comm/transport/index\\_en.html](http://europa.eu.int/comm/transport/index_en.html)), which looks after the different sectors: air transport, road transport, rail transport, maritime transport, inland waterway, intermodal transport, logistics, clean urban transport, and transport infrastructure charging policy. In 2001, it published its latest transport White Paper, a mid-term review of which was published in 2006. ([http://ec.europa.eu/transport/transport\\_policy\\_review/doc/2006\\_3167\\_brochure\\_en.pdf](http://ec.europa.eu/transport/transport_policy_review/doc/2006_3167_brochure_en.pdf)).

The mid-term review recommends a more holistic approach to transport policy, and argues for a broader range of policy tools that will achieve more environmentally-friendly modes of transport. However, it lacks any reference to the need to address problems associated with physical inactivity.

It is anticipated that DG Transport will publish a Green Paper on Urban Transport sometime in late 2007.

The EEA has also addressed transport in its 2006 TERM (environment reporting mechanism) report summarising ten selected issues on transport and environment indicators. The publication evaluates indicator trends of progress towards existing policy objectives and targets, and as with previous publications has as its objective to highlight some of the main challenges to reducing the environmental impacts of transport

([http://reports.eea.europa.eu/eea\\_report\\_2006\\_3/en](http://reports.eea.europa.eu/eea_report_2006_3/en)). With regard to health, the focus of the report is on air pollution and climate change. Highlighted are the reduction in emissions from PM, acidifying substances and ozone precursors and growing greenhouse gas emissions. Again, however, there is also no reference to the link between reliance on motorised transport and health problems associated with physical inactivity.

## 2) International Organizations

**WHO** (<http://www.euro.who.int/eprise/main/WHO/Progs/TRT/Home>)

The WHO transport programme aims to facilitate a shift in current strategies towards full consideration of the implications of transport policies for sustainable development, the environment and health as mandated by the Third Ministerial Conference on Environment and Health (1999).

Programme activities focus on:

- Development of methods and tools for health impact assessment (HIA) to support Member States in the definition and management of mobility policies beneficial to health
- Development of policies for transport sustainable for health and the environment
- Promotion of healthy transport modes
- Promotion of an integrated approach to road safety as a key component of sustainable mobility.

### **Sustainable Mobility**

Jointly managed by the WHO/Europe and the UNECE is the pan-European programme on transport, health and environment (THE PEP) (<http://www.thepep.org>), which provides the current WHO regional policy framework for transport, health and environment. The focus of PEP activities is on three key priorities:

- Integration of environmental and health aspects into policies and decisions on transport
- A shift of the demand for transport towards more sustainable mobility; and
- Urban transport.

The PEP incorporates the objectives of the 1999 WHO Charter on Transport, Environment and Health promoting the development of policies for “transport sustainable for health and the environment”, as well as the UNECE Programme of Joint Action on Transport and Environment (POJA) (<http://www.unece.org/poja>), and the WHO Health Effects and Risk of Transport Systems (HEARTS) (<http://www.who.dk/hearts>), which promotes healthier transport policies through the development of tools that support the integration of health impact assessments in the decision-making process.

As well as this the links between physical exercise and healthy environments are looked at under the European network for the promotion of health-enhancing physical activity (HEPA). <http://www.euro.who.int/hepa>

## OECD

OECD's ([http://www.oecd.org/topic/0,2686,en\\_2649\\_37433\\_1\\_1\\_1\\_1\\_37433,00.html](http://www.oecd.org/topic/0,2686,en_2649_37433_1_1_1_1_37433,00.html)) work on transport covers a broad set of activities directed at providing input to the policy debate on current and emerging issues.

In 1994, the OECD initiated an international project on Environmentally Sustainable Transport (EST) ([http://www.oecd.org/department/0,3355,en\\_2649\\_34363\\_1\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/department/0,3355,en_2649_34363_1_1_1_1_1,00.html)) aimed at charting a path towards greater reliance on more sustainable methods of transport. Under the project the OECD has produced a set of guidelines on moving towards EST.

The OECD runs the European Conference of Ministers of Transport (ECMT <http://www1.oecd.org/cem/>), which was recently reformed into the International Transport Forum (ITF) (<http://internationaltransportforum.org/>). Together with the OECD, the ECMT established the Joint Transport Research Centre (<http://www1.oecd.org/cem/JTRC/JTRC-HomePage.htm>) in January 2004. Its work programme for 2007-2009 includes transport and health issues.

The OECD works closely with other international organisations, including APEC, EC, PIARC, UN, World Bank, and the World Trade Organisation.

### 3.1.13. Urban Environment

As urban populations grow, the quality of the urban environment will play an increasingly important role in public health with respect to issues ranging from solid waste disposal, provision of safe water and sanitation, and injury prevention, and in the interface between urban poverty, environment and health.

Urban air pollution, road accidents, and a rise in a more sedentary lifestyle are all problems associated with the urban environment.

## 1) EU Policy

In January 2004, the Commission adopted a Communication COM(2004)60 “Towards a Thematic Strategy on the Urban Environment” ([http://www.europa.eu.int/comm/environment/urban/thematic\\_strategy.htm](http://www.europa.eu.int/comm/environment/urban/thematic_strategy.htm)), which set out the Commission’s ideas for the Thematic Strategy on the Urban Environment. The Communication described the problems and challenges facing Europe’s urban areas, highlighted the actions taken so far at the European level, and proposed ideas for further action to better address the challenges identified. The focus of the Communication was on four priority themes: urban environmental management, urban transport, sustainable construction, and urban design.

As a result of the Communication, expert working groups were established, whose role was to consider technical issues for environmental management plans, sustainable urban transport plans and priorities for future research and training.

Subsequently, on the 11 January 2006 the EU adopted a Thematic Strategy on Urban Environment. The strategy was adopted in line with the 6th Environmental Action programme (EAP), which called for the development of the Thematic Strategy, with the objective of “contributing to a better quality of life through an integrated approach concentrating on urban areas,” and to contribute “to a high level of quality of life and social well-being for citizens by providing an environment where the level of pollution does not give rise to harmful effects on human health and the environment and by encouraging sustainable urban development.”

The Thematic Strategy, which was based on extensive consultation with stakeholders, the EU Expert groups on the Urban Environment and impact assessment results, sets out measures to support and facilitate an integrated approach to the management of the urban environment. The key actions proposed under the Strategy are:

- Guidance on integrated environmental management and on sustainable urban transport plans
- Training and capacity-building for local authorities
- Support for EU-wide exchange of best practices
- Commission internet portal for local authorities.

As a result of the Strategy, the pilot European Urban Knowledge Network ([www.eukn.org](http://www.eukn.org)) was launched on October 2005. A network of national focal points, it provides advice and information on tackling urban issues to cities, including on the urban environment.

Further support for local authorities and mayors is provided by the Urban Audit, which offers statistics for 258 cities across 27 European countries on matters including the environment and transport thereby enabling comparisons to be made and facilitating the exchange of information. The Eurocities network has a working group on Environment and Health, see <http://www.eurocities.org>, and the Committee of the Regions (<http://www.cor.europa.eu/en/presentation/deve.asp>) has a Commission on Sustainable Development that consider both health and the environment.

For more information please see: [http://ec.europa.eu/environment/urban/home\\_en.htm](http://ec.europa.eu/environment/urban/home_en.htm)

## 2) International Organizations

### **WHO Healthy Cities Network** (<http://www.euro.who.int/healthy-cities>)

This programme is designed to engage local governments and put health high on the political and social agenda, promoting improved local health policy and planning through institutional change, capacity-building, and partnership-based planning. Currently in its fourth phase (2003-2008), the WHO Healthy Cities programme covers the following key themes: healthy ageing, healthy urban planning and health impact assessment.

In 2005, the WHO Healthy Cities network completed the “Phase” project, whose overall objective was to promote the integration of health and sustainable development at the local level. The key outcome of the project was the health impact assessment toolkit (HIA).

### **International Council for Local Environmental Initiatives – ICLEI** (<http://www.iclei.org/>)

ICLEI is an international association of over 550 local governments and national, regional, and local government organisations that have made a commitment to sustainable development. The organisation, founded in 1990, supports local governments through the provision of technical consulting, training, capacity-building, and information services. It runs a broad range of campaigns and programmes that address local sustainability issues.

### 3.1.14. Emerging issues

#### Nanotechnology

Nanotechnology refers to technologies in which matter is manipulated on the atomic and molecular scale to create novel materials and processes. Nanotechnology is a relatively new field of technology that promises to revolutionise many materials and applications, from polymers to medicines.

At present, there are four main nanotechnology sectors:

- Nanoelectronics – The development of micro-electronics, in particular for computers.
- Nanobiotechnology – The combination of nano engineering with biology to manipulate either living systems or build biologically inspired materials at the molecular level.
- Nanomedicine – The application of nanotechnology to area of health.
- Nanomaterials – The precise control of the morphology at nanoscale dimensions of substances or particles to produce nanostructured materials.

All of these fields are already commercially important, and products based on nanotechnology are already in use. The “Project on Emerging Nanotechnologies” (<http://www.nanotechproject.org/7>), a partnership between the Woodrow Wilson International Center for Scholars and the Pew Charitable Trusts, estimates that nanotechnology is used in nearly 500 products. For example, nanoparticles and materials can be found in sunscreens, air filters, food containers, targeted drug delivery systems, etc. The most widely used nanomaterial is nano silver.

In the next decade, nanotechnology is expected to play a major role in virtually all sectors and products. However, as yet, little is known about nanoparticles in the environment, and there is growing concern surrounding their health effects. As small particles, insoluble nanoparticles have a greater (re)active surface area per unit mass than larger particles, which may increase their toxicity and potential health effects. Nanoparticles can enter the human body by inhalation and by ingestion and to some extent through the skin. They easily pass through membranes, including the cell membrane, the blood-brain barrier and the placenta. In general, they are too small to be recognized by the immune system. From exposure to unintentionally produced nanoparticles, like diesel exhaust, and to asbestos fibres and bulk products, like carbon black and titanium dioxide, we know that otherwise harmless substances may become toxic due to increased surface, chemical composition and form. Newly synthesized particles may possess emergent properties that could be harmful.

Nanotoxicology is a new scientific field where much is still unknown, such as for example how nanoparticles interact with cell structures or protein synthesis. It is possible that new research into this field may yield insights into carcinogenesis and mechanisms of action of particulate matter. At the moment, however, there is no agreed method for assessing exposure or body burden of nanoparticles.

Current regulation is based on concentrations, not on reactive surface. Many chemicals that are relatively insoluble have been classified as non-toxic and are therefore allowed to be used in many applications, including food.

People are also exposed to these minute nanoparticles in the workplace, and there is no regulation in place to protect employees.

Given how much is unknown about the technology, it is evident that further research into nanotechnology is needed. Until now, previous EU Framework Programmes (FP) have funded research projects such as: Nanosafe ([http://www.nanosafe.org/about\\_us](http://www.nanosafe.org/about_us)), which looked into the prevention measures and codes of practice needed for the use and production of nanoparticles; Nanoforum (<http://www.nanoforum.org/>), set up to give stakeholders a chance to express their hopes and concerns in this field; Nanopathology (<http://www.nanopathology.it/>); and Nanologue (<http://www.nanologue.net/>) launched in 2005 to bring together leading research on the social, ethical and legal implications of nanotechnology, and which came to an end after 21 months. Under the 7th FP nanosciences, nanotechnologies, materials and new production technologies has received a budget of 3,475 million Euros.



The European Commission adopted a Communication “Towards a European Strategy for Nanotechnology” in 2004, and in 2005 adopted the Communication “Nanosciences and nanotechnologies: An Action Plan for Europe 2005-2009” ([http://ec.europa.eu/nanotechnology/pdf/action\\_plan\\_brochure\\_en.pdf](http://ec.europa.eu/nanotechnology/pdf/action_plan_brochure_en.pdf)). The latter defined a series of articulated and interconnected actions for the immediate implementation of a safe, integrated and responsible approach for nanosciences and nanotechnologies. It includes a section on public health, safety and environmental and consumer protection, which calls for risk assessment related to human health to be integrated at all stages of the life cycle of the technology.

Key Elements of the Nanotechnology Action Plan include:

1. Research, development and innovation: European needs knowledge
2. Infrastructures and European Poles of Excellence
3. Interdisciplinary human resources: Europe needs creativity
4. Industrial Innovation: From knowledge to the market
5. Integrating the societal dimension: Addressing expectations and concerns
6. Public health, safety, environmental and consumer protection
7. International cooperation

As a result of the Action Plan, the European Commission requested the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) to produce scientific advice on “the appropriateness of the risk assessment methodology in accordance with the Technical Guidance Documents for new and existing substances for assessing the risks of nanomaterials”.

The result, the SCENIHR report, which was approved for public consultation on 29 March 2007, provides the Commission with a sound scientific approach on how to modify the Technical Guidance Documents of the EU chemicals legislation with regard to nanomaterials. The report provides proposals for general and specific modifications to risk assessments undertaken with respect to human health and the environment, and describes a staged strategy for the risk assessment of nanomaterials. It also identifies areas of further research.

Also in 2007, the Scientific Committee on Consumer Products (SCCP) issued a preliminary opinion on the “Safety of nanomaterials in cosmetic products.” The report concludes that in relation to nanomaterial risk assessments, traditional methods may not be suitable. New methods should be developed and/or existing methods should be validated. According to the SCCP, risk assessments on nanoparticles should be carried out on a case-by-case basis.

In September 2007, the European Commission reported on progress in all the areas of the Action Plan in its First Implementation Report 2005-2007 ([ftp://ftp.cordis.europa.eu/pub/nanotechnology/docs/com\\_2007\\_0505\\_f\\_en.pdf](ftp://ftp.cordis.europa.eu/pub/nanotechnology/docs/com_2007_0505_f_en.pdf))

Here, the European Commission recognises that the best way to protect health and the environment from the potential harmful effects of nanotechnology would be to improve the implementation of existing regulation. The review does not advocate for new legislation with regard to nanotechnology but indicates that the existing risk assessment methods, in particular, should be reviewed. This conclusion is in line with a report from the EU's scientific committee on emerging and newly-identified health risks.

Notably, it is possible that REACH regulation may cover some aspects of nanoparticles produced in high quantities.

European Technology Platforms relevant to nanotechnology include:

- Nanomedicine (<http://cordis.europa.eu/nanotechnology/nanomedicine.htm>)
- Nanoelectronics (<http://cordis.europa.eu/ist/eniac/>)
- Sustainable Chemistry (<http://www.suschem.org/>)
- Industrial Safety (<http://www.industrialsafety-tp.org/>)
- Innovative Medicine (<http://cordis.europa.eu/lifescihealth/innovativemedicines.htm>)

## Electromagnetic Fields

Modern society is becoming increasingly dependent on mobile phones, cordless phones, wireless internet and other electronic devices with electromagnetic fields (EMF). Broadly-speaking electromagnetic fields (EMF) are divided into two categories: radiofrequency fields (RF), for which the main sources are mobile telephones and their base stations, radio and television broadcast facilities, radar, induction heaters and anti-theft devices; and low-frequency electric fields (ELF), where common sources are household electrical appliances, interior electrical wiring and lighting, and power lines.

[http://ec.europa.eu/health/ph\\_determinants/environment/EMF/emf\\_en.htm](http://ec.europa.eu/health/ph_determinants/environment/EMF/emf_en.htm)

Public exposure to EMF is widespread and increasing therefore any health impacts could have significant repercussions in terms of public health. Currently there are indications that public safety limits are not sufficiently protective of public health with respect to chronic, low-level exposures. The human body is regulated by internal bioelectrical signals with which EMF has the potential to interact and as a result possibly cause discomfort and disease. There are growing concerns among the public with respect to mobile phones and transmitter masts, which emit a low level non-ionizing radiation over prolonged periods, and exposures to other new applications using radio-frequencies, such as radio frequency identification devices (RFID).

Consequently, the Commission is closely monitoring new developments in scientific research and international regulatory action. In 2006, it asked that existing scientific advice on the health risks associated with exposure to the EMF be updated. SCENIHR has since updated the 2001 opinion of the Scientific Committee on Toxicity, Ecotoxicity and the Environment (CSTEE) on "Possible effects of Electromagnetic Fields (EMF), Radio Frequency Fields (RF) and Microwave Radiation on human health", and produced a "Preliminary Opinion on Possible effects of Electromagnetic Fields (EMF) on Human Health" ([http://ec.europa.eu/health/ph\\_risk/committees/04\\_scenihr/docs/scenihr\\_o\\_006.pdf](http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_006.pdf)).

In addition to this, in 1999, a Council Recommendation ([http://eur-lex.europa.eu/pri/en/oj/dat/1999/l\\_199/l\\_19919990730en00590070](http://eur-lex.europa.eu/pri/en/oj/dat/1999/l_199/l_19919990730en00590070)) was adopted to limit the exposure of the general public to EMF. This recommendation was based upon guidelines of the International Commission on Non Ionizing Radiation Protection. The Recommendation establishes a system of basic restrictions and reference levels for overall public exposure.

Further work in the arena of EMF is being done by the WHO through its International EMF Project. Started in 1996, this project aims to identify research needs and co-ordinate a world-wide programme of EMF studies to allow a better understanding of any health risks associated with EMF exposure (<http://www.who.int/peh-emf/project/en/>). The WHO EMF Program issued an Extremely-Low Frequency (ELF) Monograph #322 in June 2007 with its environmental health criteria assessment.

Most recently, an international working group of scientists, researchers and public health policy professionals released a report on electromagnetic fields (EMF) and health entitled the “Bioinitiative: A Rationale for a Biologically-Based Public Exposure Standard for Electromagnetic Fields” (<http://www.bioinitiative.org/>), which raised serious scientific concerns regarding the health effects of daily exposure to electromagnetic fields (EMFs). According to the report existing safety standards regulating exposure to EMF are likely to be inadequate to protect public health.

Jacqueline McGlade, executive director of the European Environmental Agency (EEA) says of EMF: “The exposure to electromagnetic fields is rising, and it's widespread... So, come what may, we should be anticipating that even with a low dose, but with wide exposure, this will require much more inspection.”

“(R)ecent research and reviews on the long-term effects of radiations from mobile telecommunications suggest that it would be prudent for health authorities to recommend actions to reduce exposures, especially to vulnerable groups, such as children.’

The California-based Collaborative for Health and the Environment (CHE) EMF Working Group has issued a draft EMF Consensus Statement calling for caution in the deployment and use of wireless technology.

[http://www.healthandenvironment.org/wg\\_emf\\_news/772](http://www.healthandenvironment.org/wg_emf_news/772)

### 3.1.15. Research

The continuing and accelerating pressure on the environment is affecting human health in various complex ways. Research into those environmental factors affecting human health can help to identify problems and find solutions. It provides policy-makers, businesses, NGOs and individuals with vital knowledge and guidance that can be used to tackle environmental health problems and help to prevent them in the future.

## 1) EU Policy

Research is the cornerstone of the European Union's strategy for becoming the world's most competitive and dynamic knowledge-based economy by 2010. The European Union neither carries out nor controls research but instead provides funding instruments for research through the Framework Programmes (FP) for Research and Technological Development. First launched in 1984, the Framework Programmes have played a key role in multidisciplinary research in Europe and beyond.

### 5th EU Framework Programme – FP5 - (1998-2002)

During the 5th EU Framework Programme (FP) ([http://ec.europa.eu/research/quality-of-life/ka4/index\\_en.html](http://ec.europa.eu/research/quality-of-life/ka4/index_en.html)), Environment and Health was seen as a priority issue and was allocated an overall budget of €160 million. FP5 comprised four Thematic Programmes, one of which was the “Quality of Life and Management of Living Resources”, which in turn was built around six key actions. Key Action 4 was entitled “Environment and Health” and covered the following areas:

- Endocrine disrupters
- Air pollution
- Chemical reactions
- Asthma and allergies
- Electromagnetic fields
- Environment and cancer
- Noise
- Children's health and the environment

EU research results on Environment and Health FP5 projects can be found here: [http://ec.europa.eu/research/environment/themes/projects\\_en.htm](http://ec.europa.eu/research/environment/themes/projects_en.htm)

While being planned, as yet no one project or person has been responsible for identifying necessary policy changes in light of these reports. Whilst the SCALE process in some respects was timed correctly to do this, mechanisms for EU policy change in light of FP5 are not apparent. ([http://ec.europa.eu/environment/health/action\\_plan.htm](http://ec.europa.eu/environment/health/action_plan.htm))

**6th EU Framework Programme – FP6 – (2003-2006)**

Under FP6 ([http://europa.eu.int/comm/research/fp6/index\\_en.cfm?p=0](http://europa.eu.int/comm/research/fp6/index_en.cfm?p=0)) the Environment and Health programme was disbanded. However, much work was carried out under the Endocrine Disruptors in the food quality and safety budget lines.

([http://ec.europa.eu/research/endocrine/index\\_en.html](http://ec.europa.eu/research/endocrine/index_en.html))

**7th EU Framework Programme – FP7 – (2007-2013)** (<http://ec.europa.eu/research/fp7/>)

Under FP7, Environment and Health has its own appropriations for the implementation of the EU Action Plan on Environment and Health (both under the Environment heading and via the Joint Research Centre). In addition, other programmes will continue to fund environmental health research (public health, food quality & safety, civil society etc).

For further information, see the SCHER opinion on FP7 research needs for EU Environment and Health [http://ec.europa.eu/health/ph\\_risk/committees/04\\_scher/docs/scher\\_o\\_044.pdf](http://ec.europa.eu/health/ph_risk/committees/04_scher/docs/scher_o_044.pdf) as well as stakeholder perspectives on EU Environment and Health research priorities at [http://ec.europa.eu/research/environment/newsanddoc/article\\_3907\\_en.htm](http://ec.europa.eu/research/environment/newsanddoc/article_3907_en.htm)

The first phase of the programme of the programme was considered in a call for proposals at the beginning of 2007 (now closed), see: [http://ec.europa.eu/research/environment/newsanddoc/article\\_3907\\_en.htm](http://ec.europa.eu/research/environment/newsanddoc/article_3907_en.htm)

It included research under the following headings:

1. Indoor air pollution in Europe: an emerging environmental issue
2. Environmental factors and their impact on reproduction and development
3. European network on human biomonitoring, a network of excellence
4. European cohort on air pollution (large scale project)
5. Health impacts of drought and desertification including socio-economic aspects
6. Geographical information systems in support for environment and health research

Also highly important has been a call for an ERA-NET (European Research Area) on Environment and Health. The aim of the ERA-NET Scheme is to improve the cooperation and coordination of research activities carried out at national or regional level in the Member States and Associated States.

FP7 will provide valuable research that will underpin the 6th EAP in the domain of environment. The key differences in FP7 in comparison to earlier Framework Programmes include: a 63% increase in budget in comparison to FP6; a strong focus on research themes including health; the creation of the European Research Council (ERC); the establishment of Joint Technology Platforms (JTIs), a follow up to the European technology Platforms; and. the creation of a single helpdesk, Regions of Knowledge, and risk-sharing finance.

The EU supports the Commission's environment research programme ([http://europa.eu.int/comm/research/environment/index\\_en.htm](http://europa.eu.int/comm/research/environment/index_en.htm)), which includes research activities aimed at recommending practical ideas and technologies to help solve the environmental problems facing Europe and the world. Information on environmental research themes under FP5 and FP6 can be found on the Commission website ([http://ec.europa.eu/research/environment/themes/themes\\_en.htm](http://ec.europa.eu/research/environment/themes/themes_en.htm)).

### **Joint Research Centre – JRC** (<http://www.jrc.cec.eu.int/>)

The JRC is a Directorate General of the European Commission that provides research based policy support and input into the Environment and Health process. Of particular interest are its Institute for Environment and Sustainability (IES) ([http://www.jrc.cec.eu.int/page.asp@sidsz=our\\_organisation&sidstsz=ies.htm](http://www.jrc.cec.eu.int/page.asp@sidsz=our_organisation&sidstsz=ies.htm)) and the Institute for Health and Consumer Protection (IHCP) ([http://www.jrc.cec.eu.int/page.asp@sidsz=our\\_organisation&sidstsz=ihcp.htm](http://www.jrc.cec.eu.int/page.asp@sidsz=our_organisation&sidstsz=ihcp.htm)).

The JRC will contribute the field of environmental health through the following actions:

- The development and validation of methods for monitoring pathways and assessing exposure:
- The assessment of health effects through experimental work, biomonitoring, toxicogenomic analyses, computational techniques and analytical tools
- The exploitation of knowledge derived from the two items above in order to contribute to the future development of an integrated environment and health system, in line with the policy framework on E&H information being developed under the EU Action Plan.

## **2) International Organisations**

### **WHO**

The WHO carries out much research and reviews scientific evidence on the Environmental Burden of Disease ([http://www.who.int/quantifying\\_ehimpacts/en/](http://www.who.int/quantifying_ehimpacts/en/)).

WHO has accorded to many research institutions around the world the status of WHO Collaborative Centre (<http://whqlily.who.int/>). This database of collaborative centres is a valuable resource for links to scientific and research institutions, including the International Agency for Research on Cancer (IARC) (<http://www.iarc.fr/>).

### OECD

The OECD also carries out work on Environment and Health particularly looking at valuations of environmental health on children.

([http://www.oecd.org/topic/0,3373,en\\_2649\\_32495306\\_1\\_1\\_1\\_1\\_37465,00.html](http://www.oecd.org/topic/0,3373,en_2649_32495306_1_1_1_1_37465,00.html)). They also have an extensive programme on other environment related issues [http://www.oecd.org/topic/0,3373,en\\_2649\\_37465\\_1\\_1\\_1\\_1\\_37465,00.html](http://www.oecd.org/topic/0,3373,en_2649_37465_1_1_1_1_37465,00.html)

## 3.1.16. Public Health

Good health is something that everyone wants. It plays a key role in human well being, long-term economic growth and sustainable development. However, the presence of natural or man-made hazards poses a threat to public health and is a source of environmental diseases. Environmental health problems include hearing problems, sleeping disorders, stress leading to hypertension and other circulatory diseases, skin and other cancers, asthma, or birth defects.

### 1) EU Policy

In the field of public health, no direct legal basis for an EU health policy existed until the Treaty on the European Union (Treaty of Maastricht) was ratified in 1993. However, while not mentioning public health explicitly, the earlier founding treaties of the European Economic Community do contain references to health in specific areas such as restrictions on the import and export of special goods for the protection of human health, health and safety at the workplace.

In 1991, the Community's competence in public health was expanded and defined more precisely. This resulted in the inclusion of the article 129 on public health which gives the Community a competence on public health for the first time. Essentially, this specifies the Community role in the coordination of national health policies limited to topics of general interest: prevention of diseases, health information and education. More importantly, it specifies that "Health protection shall form a constituent part of the Community's other policies".



In spite of the absence of any clear legal basis for an EU public health policy, a number of health-related activities were undertaken prior to ratification of the Treaty of Maastricht, including: “Europe against cancer” and “Europe against AIDS” which began in 1987 and 1991.

Furthermore, since 1965 a range of EU legislation has been enacted that seeks to ensure high standards in medicine research and manufacturing. The creation of the Single Market and the right of free movement has provided new possibilities for both health professionals and patients alike. Doctors, nurses, midwives, dentists and pharmacists all benefit from special legislation permitting them to practice freely throughout the EU.

Since 1997, The Treaty of Amsterdam gives the EU a mandate on public Health. The legal competence on public health was strengthened in 1997 with the Amsterdam Treaty when the European Union was mandated to ensure that 'a high level of health protection shall be ensured in the definition and implementation of all Community policies and activities'. While article 152 extends the scope of public health related policy, it maintains the subsidiarity principle for health which provides that the Union shall respect the Member States responsibilities for the organisation and delivery of their own health services and medical care.

This means that the EU has a limited mandate to adopt public health policies while respecting the right of Member States to adopt national level measures to regulate the organisation and delivery of health services. In addition, the EU has a specific right to legislate on blood, organs and tissues (safety and quality of blood, blood derivatives, human tissues and human cells used in medical treatments).

### **Towards a Community Action Programme**

The main thrust of EU public health policy is to help member states pool their expertise on health, to identify and share best practice, and to help coordinate the EU wide response to health threats, prevention approaches and health promotion activities. Fostering cooperation between EU countries' healthcare systems is also becoming an increasingly important area of activity. To promote greater EU cooperation in the field of public health, DG SANCO is responsible for preparing a Health Strategy and for implementing it through the Community Action Programmes for Public Health.

The Commission took the first step towards achieving its Community Action Programmes for Public Health when in 1993 it presented a Communication on the Framework for Action in the Field of Public Health as an initial strategy document to develop work on public health. On this basis, eight action programmes on health promotion, cancer, drug dependence, AIDS and other communicable diseases, health monitoring, rare diseases, accidents and injuries, and pollution-related diseases, were agreed.

This was followed in May 2000 by the adoption of a Communication on health strategy at EU level. This Communication ([http://europa.eu/eur-lex/en/com/pdf/2000/en\\_500PC0285.pdf](http://europa.eu/eur-lex/en/com/pdf/2000/en_500PC0285.pdf)) called for concentrating resources where the Community can provide real added value, without duplicating work which can be better done by the Member States or international organisations. Supported by a single Public Health Programme 2003-2008 (that replaced the eight previous programmes), it led to the development of public health activities and to a strengthening of links to other health-related policies.

By the end of 2007, the European Commission is due to propose a text for a new EU Health Strategy, which is likely to be adopted as a Communication by the end of 2008. The considerable delays in the preparatory process of this new Strategy (due to political circumstances), and the need for a budget for health activities, has forced the European Union to adopt a new Public Health Programme without waiting for the Strategy. This new programme will run from 2008 until 2013.

### **The Community Action Programme for Public Health 2003-2008**

The first coordinated and coherent EU approach to health policy was set out in the health strategy issued in May 2000. In light of this strategy DG SANCO proposed a public health programme, which was adopted in September 2002. This current Public Health Programme runs from 2003-2008 and has three key priorities:

- 1) To improve information and knowledge for the development of public health.
- 2) To enhance the capacity of responding rapidly and in a coordinated fashion to threats to health.
- 3) To promote health and to prevent disease through addressing health determinants across all policies and activities, including activities relating to the environment.

This programme complements, rather than replaces, national policies on health and its overarching aim is to protect human health and improve public health. The Commission emphasises that in order to fulfil the objectives of the Programme there needs to be effective cooperation of Member States as well as dialogue with key partners. These key partners include non-governmental organisations and they are able to submit projects to implement the specific priorities of the Public Health Programme, as defined by the Commission in its annual calls for tenders.

For a list of environment related projects funded by the action plan please see: [http://ec.europa.eu/health/ph\\_projects/action3\\_en.htm](http://ec.europa.eu/health/ph_projects/action3_en.htm)

### **The Community Action Programme for Public Health 2008-2013**

The Commission proposed in April 2005 a new Community Programme for Public Health ([http://ec.europa.eu/health/ph\\_overview/pgm2007\\_2013\\_en.htm](http://ec.europa.eu/health/ph_overview/pgm2007_2013_en.htm)). With the same aim as the previous programme, this new programme is envisioned to improve Community efforts in the field of health.

Its objectives are to:

- Improve citizen's health security
- Promote health
- Generate and disseminate health information and knowledge

The text of the proposal for the second Community Action Programme is available on the Commission website ([http://ec.europa.eu/health/ph\\_overview/pgm2007\\_2013\\_en.htm](http://ec.europa.eu/health/ph_overview/pgm2007_2013_en.htm)), however the final text has not yet been adopted by the European Union. The new Public Health Programme 2008-2013 will include priorities on environmental issues, such as improving indoor air quality.

The Public Health Programme is open to initiatives in international cooperation with third countries and for cooperation with international organisations, such as the World Health Organisation and Organisation for Economic Cooperation and Development.

The Commission under the Directorate for public health also runs a working party on Environment and Health, as well as the EU Scientific Committee on Environment and Health.

Public health, including its environmental aspects, is also addressed in other DGs, such as DG Environment, as seen earlier.

### **Environment and Health Action Plan - DG Environment**

In addition to the activities undertaken by DG SANCO, DG Environment has developed an Environment and Health Action Plan, which has for an objective: monitoring environmental exposure to pollutants, and as a consequence the alterations of health and well being by the development of relevant indicators, through health impact assessment risk analysis and risk communication. For more information please see the section on the Environment and Health Action Plan.

DG environment also takes the leading role in the following areas relating to environment and public health: Air, Biotechnology, Chemicals, Civil Protection and Environmental Accidents, Climate Change, Industry and Technology, Noise, Soil, Sustainable Development, Waste, Water. For more information on these please see individual policy chapters.

### **Environmental Impacts of Medicines - DG Enterprise**

EU policy towards medicines has been primarily concerned with the safety of medicinal products and the competition issues surrounding industrial production. The EU's key objectives are to guarantee access to medicines at an affordable cost, ensure that medicines are safe and effective, and improve the quality and dissemination of information to citizens. As a result, the environmental impact of pharmaceuticals has not been addressed within the EU public health policy.

However, despite the lack of an EU policy, some member states such as Sweden have done extensive work in this area and several research projects address this topic. In particular, Stockholm County Council has elaborated a scoring system for different medications that takes into account environmental persistence (P), bio-accumulation (B) and toxicity (T) ([http://www.janusinfo.org/imcms/GetDoc?meta\\_id=7238](http://www.janusinfo.org/imcms/GetDoc?meta_id=7238)).

Moreover, in response to concern regarding the lack of ecotoxicity data – less than 1% of human pharmaceuticals have such data available according to the April 2004 issue of Regulatory Toxicology and Pharmacology - the European Medicines Agency (EMA) has drafted guidance outlining the environmental risk assessment procedure to accompany pharmaceutical companies' application to market new drugs in Europe (<http://www.emea.europa.eu/pdfs/human/swp/444700en.pdf>). The period for public comment closed in April 2005.

### European Health Agencies

There are also a number of specialised agencies dealing with health and related issues:

#### European Agency for Health and Safety at Work – OSHA

Addressing the diversity of occupational safety and health (OSH) issues and the need for increased awareness at workplace are beyond the resources and expertise of a single Member State. That is why in 1996 the European Agency for Safety and Health at Work was set up: to collect, analyse and promote OSH-related information. The Agency's mission is to make Europe's workplaces safer, healthier and more productive, and in particular to promote an effective prevention culture.

#### European Centre for Disease Prevention and Control - ECDC

The newest member of the family of health agencies is the ECDC launched in June 2005 and based in Stockholm. The ECDC has been created to strengthen the EU's defence against infectious diseases, including influenza, SARS and HIV/AIDS. The centre will focus on working in partnership with European national bodies to strengthen and develop disease surveillance and early warning systems. The idea is to pool Europe's scientific knowledge in order to develop authoritative scientific opinions on the risks of new and emerging infectious diseases. Whilst the EU Regulation establishing the Agency does not include any reference to the environment, two of ECDC's seven horizontal disease specific activities do in fact address the link between the environment and human health.

The first is a “Project on food and water-borne diseases”. The second, the “Project on other diseases of environmental and zoonotic origin”, focuses on the group of diseases that pose a risk for human infections from reservoirs in the environment and European animal populations. The overall aim of the latter is to establish the European reference point for the group of diseases covered by the project, with the overarching goal of ensuring a rational European approach with regards to prevention and control strategy options.

### **European Food Safety Authority – EFSA**

Following a series of food scares in the 1990s (e.g. BSE, dioxins...) which undermined consumer confidence in the safety of the food chain, the European Union concluded that it needed to establish a new scientific body charged with providing independent and objective advice on food safety issues associated with the food chain. The European Food Safety Authority provides independent scientific advice on all matters linked to food and feed safety - including animal health and welfare and plant protection - and provides scientific advice on nutrition in relation to Community legislation.

### **European Medicines Evaluation Agency – EMEA**

EMEA is located in London and has as its main responsibility the promotion of human and animal health through the evaluation and supervision of medicines for human and veterinary use. Scientific resources from all 27 Member States are brought together in a network of 42 national competent authorities, equalling some 3500 European experts involved in the agency's work. EMEA also cooperates closely with various global partners.

## **3.2. HORIZONTAL ISSUES**

### **3.2.1. Aarhus Convention**

The Aarhus Convention is an environmental treaty that grants citizens access to environmental information, participation in decision-making in environmental matters, and judicial redress where the two previous rights or other environmental provisions have been violated. The Convention cannot be seen as a traditional environmental agreement since it also concerns the complex relationship between people and their governments. It links environmental rights and human rights, government accountability and environmental protection. It recognizes the primary role of citizens and the importance of their involvement in the achievement of sustainable development objectives.

The objective of the Aarhus Convention is to:

“Contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being” by guaranteeing:

- Right of Access to Information, (“right to know”), which includes the state of human health and safety and conditions of human life. Public authorities have an obligation to respond to public requests for information both upon request and proactively.
- Public participation in decision-making on specific activities (art 6), plans, programmes and policies (art 7), preparation of executive regulations and/or generally applicable legally binding normative instruments (art 8).
- Access to Justice in Environmental matters where the two previous rights or other environmental provisions have been violated. The inclusion of an 'access to justice' pillar not only underpins the first two pillars; it also points the way to empowering citizens and NGOs to assist in the enforcement of the law.

The Convention was negotiated among the countries of the United Nations Economic Commission for Europe (UNECE) and adopted on 25 June 1998 at the Fourth Ministerial Conference of the ‘Environment for Europe’ process that took place in the Danish city of Aarhus. The UNECE has 55 members and is one of the five regional commissions of the United Nations. Therefore, the Convention covers a larger geographical area than the European Union, and includes the current 27 EU member states, the US, Canada, Turkey and the former Soviet Union countries. After obtaining the required number of ratifications, the Convention entered into force on 30 October 2001 (<http://www.unece.org/env/pp/in.force.htm>) and progress of ratification (<http://www.unece.org/env/pp/ctreaty.htm>) has been relatively rapid since then.

For the first time in history, the preparation of an international treaty saw a broad involvement and participation of environmental organisations. The whole preparatory period for the new Convention was a unique possibility for co-operation between NGOs, Governments and International Institutions on equal basis. Despite some weaknesses, the Aarhus Convention was welcomed by environmental organisations as a step towards building societies where citizens can and are encouraged to play a constructive role in protecting public health and the environment.

The first meeting of the parties took place in Lucca, Italy on 21-23 October 2002 (<http://www.unece.org/env/pp/mop1.htm>). The Meeting adopted the Lucca Declaration as well as a number of decisions *inter alia* on Pollutant Release and Transfer Register (PRTR), Genetically Modified Organisms (GMOs), access to justice, electronic information tools, and rules of procedure for the Meeting of the Parties, compliance, capacity building, the work programme, and so on.

Five Working Groups or Task Forces were established at this meeting, working on the following specific issues:

- Working Group on Genetically Modified Organisms - <http://www.unece.org/env/pp/gmo.htm>
- Working Group on Pollutant Release and Transfer Registers - <http://www.unece.org/env/pp/prtr.htm>
- Task Force on Electronic Tools - <http://www.unece.org/env/pp/electronictools.htm>
- Task Force on Access to Justice - <http://www.unece.org/env/pp/a.to.j.htm>
- Task Force on Financial Arrangements - <http://www.unece.org/env/pp/financial%20arrangements.html>
- Expert Group on Public Participation in International Forums - <http://www.unece.org/env/pp/ppif.htm> which considers the scope, format and content of possible guidelines on promoting the application of the principles of the Aarhus Convention in international environmental decision-making processes.

A Compliance Committee has also been established to address issues of alleged non-compliance with the Convention (<http://www.unece.org/env/pp/compliance.htm>).

An extra-ordinary meeting of the Parties was held on 21 May 2003 in Kiev, Ukraine within the framework of the fifth 'Environment for Europe' Ministerial Conference. The Meeting of the Parties adopted the Protocol on Pollutant Release and Transfer Registers, which was subsequently opened for signature (<http://www.unece.org/env/pp/prtr.htm>). Thirty-six states and the European Community signed the Protocol in Kiev.



Pollutant release and transfer registers (PRTRs) are inventories of pollution from industrial sites and other sources. The Protocol is the first legally binding international instrument on PRTRs. Its objective is "to enhance public access to information through the establishment of coherent, nationwide pollutant release and transfer registers". Although regulating information on pollution, rather than pollution directly, the Protocol is expected to exert a significant downward pressure on levels of pollution as no company will want to be identified as among the biggest polluters. The Protocol is expected to come into force at the next Aarhus Convention Meeting of the Parties in 2008.

Move this para?The 2nd Meeting of the Parties took place in May 2005, Almaty, Kazakhstan (<http://www.unece.org/env/pp/mop2.htm>). At this meeting the Almaty Declaration was adopted, as well as the guidelines on Promoting the Application and Principles of the Aarhus Convention, and an amendment to the Convention setting more precise provisions on public participation in decision-making on deliberate release of genetically modified organisms.

The UNECE region is currently elaborating the first legally binding treaty on PRTR as a protocol to the Aarhus convention (<http://www.unece.org/env/pp/prtr.htm>).

For more information see: <http://www.unece.org/env/pp/welcome.html>

## 1) EU Policy

Since signing the Aarhus Convention in 1998, the European Commission has taken important steps to update existing legal provisions in order to meet the requirements of the Convention. These include Directive 2003/4/EC on public access to environmental information and Directive 2003/35/EC providing for public participation, both of which have been implemented into EU Member State national law and with regard to the EU's own institutions under Aarhus Regulation 1367/2006 (<http://europa.eu.int/comm/environment/aarhus/>).

The "Aarhus Regulation" relates not only to the institutions but also to bodies, offices or agencies established by, or on the basis of, the EC Treaty. All of these were given until 28 June 2007 to adapt their internal procedures and practice to the provisions of the Regulation. Regarding access to environmental information, the Aarhus Regulation extends Regulation (EC) No 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents to all Community institutions and bodies. The Aarhus Regulation furthermore requires those institutions and bodies to provide for public participation in the preparation, modification or review of "plans and programmes relating to the environment". The Aarhus Regulation also enables environmental NGOs meeting certain criteria to request an internal review under environmental law of acts adopted, or omissions, by Community institutions and bodies.

The European Community became the second signatory after Luxembourg to ratify the Protocol to the Aarhus Convention on Pollutant Release and Transfer Registers, having deposited its instrument of approval with the Secretary-General of the United Nations on 21 February 2006. The European Community's ratification will contribute to the development of an integrated European Union-wide register (<http://eper.ec.europa.eu/eper/default.asp>).

For more information see:

- UNECE website on the Aarhus Convention  
<http://www.unece.org/env/pp/welcome.html>
- Aarhus Convention Implementation Guide - <http://www.unece.org/env/pp/acig.pdf>
- Aarhus Clearinghouse for Environmental Democracy -  
<http://aarhusclearinghouse.unece.org/>
- Protocol on Pollutant Release and Transfer Registers -  
<http://www.unece.org/env/pp/prtr.htm>
- Participate NGO Campaign - <http://www.participate.org/>
- DG Environment section on Aarhus -  
<http://europa.eu.int/comm/environment/aarhus/>
- European Pollutant Emissions Register - <http://www.eper.cec.eu.int/>

For more Information please see: (<http://europa.eu.int/comm/environment/aarhus/>)

### 3.2.2. Environmental Integration

Environmental integration means making sure that environmental concerns are fully considered in the decisions and activities of other sectors.

Environmental integration became a priority in the EU's 5th Environmental Action Programme (1993-2002) in response to issues raised at the Earth summit in Rio in 1992. Since 1997, it has become a requirement under the EC Treaty. Article 6 of the Treaty states that "environmental protection requirements must be integrated into the definition and implementation of the Community policies [...] in particular with a view to promoting sustainable development".

#### The Cardiff Process

This is the name given to the process launched by European heads of state and government (The European Council) at their meeting in Cardiff, in June 1998, requiring different Council formations to integrate environmental considerations into their respective activities, putting article 6 of the EC Treaty into practice. The Cardiff process has undoubtedly contributed to raising the political profile of integration, which is now regularly discussed at the highest political level, including at the Spring European Council. The Cardiff process has also generated a sense of ownership of environmental integration in some Council formations - with positive knock-on effects on actions in other EU institutions and Member States.

The importance of integration was reaffirmed in the Sixth Environment Action Programme (<http://europa.eu.int/comm/environment/newprg/index.htm>) which stipulates that "integration of environmental concerns into other policies must be deepened "in order to move towards sustainable development."

#### Impact assessment

The Gothenburg European Council in June 2001 and the Laeken European Council in December 2001 introduced two important political considerations that would potentially facilitate environmental integration:

1. First, to consider the effects of policy proposals in their economic, social and environmental dimensions.
2. Second, to simplify and improve the regulatory environment.

Within the framework of the Better Regulation package and the European Sustainable Development Strategy, the Commission has taken several concrete actions to improve the way it designs policy. One of these is impact assessment, for which the Commission introduced a new method in 2002, integrating and replacing previous type of single-sector assessment ([http://ec.europa.eu/governance/impact/index\\_en.htm](http://ec.europa.eu/governance/impact/index_en.htm)).

Impact assessment (IA) is a process aimed at structuring and supporting the development of policies. It identifies and assesses the problem at stake and the objectives pursued. It identifies the main options for achieving the objective and analyses their likely impacts in the economic, environmental and social fields. It outlines advantages and disadvantages of each option and examines possible synergies and trade-offs.

However, despite the potential of IA, implementation of the impact assessment process is far from adequate. It often lacks the information and public participation process that would make it credible and effective.

For more information on the EU activities related to environmental integration please see: <http://europa.eu.int/comm/environment/integration/integration.htm>

### 3.2.3. Precautionary Principle

The Precautionary Principle was adopted by the UN Conference on the Environment and Development (1992), where it was agreed that in order to protect the environment, a precautionary approach should be widely applied, meaning that where there are threats of serious or irreversible damage to the environment, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation. The precautionary principle permits a lower level of proof of harm to be used in policy-making whenever the consequences of waiting for higher levels of proof may be very costly and/or irreversible.

([http://glossary.eea.eu.int/EEAGlossary/P/precautionary\\_principle](http://glossary.eea.eu.int/EEAGlossary/P/precautionary_principle))

To illustrate the idea of “precautionary prevention” we can turn to the following examples from the United States, listed in the table below. This implies the US is ahead on this. Is that true?

Table 7.1.19.1 Examples of 'precautionary prevention' in the United States<sup>20</sup>

Issue	'Precautionary prevention'
Food safety (carcinogenic additives)	The Delaney Clause in the Food, Drug and Cosmetics Act, 1957–96, which banned animal carcinogens from the human food chain
Food safety (BSE)	A ban on the use of scrapie-infected sheep and goat meat in the animal and human food chain in the early 1970s which may have helped the United States to avoid BSE
Environmental safety (CFCs)	A ban on the use of chlorofluorocarbons (CFCs) in aerosols in 1977, several years before similar action in most of Europe
Public health (DES)	A ban on the use of DES as a growth promoter in beef, 1972–79, nearly 10 years before the EU ban in 1987

## 1) EU Policy

In a Communication from the Commission on the precautionary principle ([http://europa.eu.int/comm/fisheries/doc\\_et\\_publ/factsheets/legal\\_texts/docscom/en/com\\_00\\_1\\_en.pdf](http://europa.eu.int/comm/fisheries/doc_et_publ/factsheets/legal_texts/docscom/en/com_00_1_en.pdf)), the Commission stated that they considered that the Community, like other WTO members, has the right to establish the level of protection - particularly of the environment, human, animal and plant health - that it deems appropriate. Applying the precautionary principle is a key tenet of its policy, and the choices it makes to this end will continue to affect the views it defends internationally on how this principle should be applied.

The European Environment Agency (EEA), an independent EU institution charged with providing information that can improve the decision-making processes, has produced an interesting report on the precautionary principle entitled, "Late lessons from early warnings: the precautionary principle 1896–2000" ([http://reports.eea.europa.eu/environmental\\_issue\\_report\\_2001\\_22/en/Issue\\_Report\\_No\\_22.pdf](http://reports.eea.europa.eu/environmental_issue_report_2001_22/en/Issue_Report_No_22.pdf)). The report, which is based on a series of case studies, derives the following twelve policy lessons on the precautionary principle:

<sup>20</sup> Poul Harremoës, David Gee, Malcolm MacGarvin, Andy Stirling, Jane Keys, Brian Wynne, Sofia Guedes Vaz (2001) Late lessons from early warnings: the precautionary principle 1896–2000, European Environment Agency (EEA) [Available at: [http://reports.eea.europa.eu/environmental\\_issue\\_report\\_2001\\_22/en/Issue\\_Report\\_No\\_22.pdf](http://reports.eea.europa.eu/environmental_issue_report_2001_22/en/Issue_Report_No_22.pdf)]

1. Acknowledge and respond to ignorance, as well as uncertainty and risk, in technology appraisal and public policymaking.
2. Provide adequate long-term environmental and health monitoring and research into early warnings.
3. Identify and work to reduce 'blind spots' and gaps in scientific knowledge.
4. Identify and reduce interdisciplinary obstacles to learning.
5. Ensure that real world conditions are adequately accounted for in regulatory appraisal.
6. Systematically scrutinise the claimed justifications and benefits alongside the potential risks.
7. Evaluate a range of alternative options for meeting needs alongside the option under appraisal, and promote more robust, diverse and adaptable technologies so as to minimise the costs of surprises and maximise the benefits of innovation.
8. Ensure use of 'lay' and local knowledge, as well as relevant specialist expertise in the appraisal.
9. Take full account of the assumptions and values of different social groups.
10. Maintain the regulatory independence of interested parties while retaining an inclusive approach to information and opinion gathering.
11. Identify and reduce institutional obstacles to learning and action.
12. Avoid 'paralysis by analysis' by acting to reduce potential harm when there are reasonable grounds for concern.

## 2) International Organisations

### WHO

Through its Health Impact Assessment Methods and Strategies (HMS) the WHO/Europe is attempting to clarify the role and relevance of the Precautionary Principle in protecting human health. One crucial point is that invoking the precautionary principle in situations of uncertainty should not be seen in opposition to sound, science-based decision-making, but rather as one of the guiding principles in environment and health.

In fact, the WHO has been paying particular attention to decision-making in environment and health matters under scientific uncertainty and complexity. At the fourth Ministerial Conference, held in Budapest in 2004, the question of how the precautionary principle can help protect the health of children and future generations was addressed, and its importance highlighted in the conference declaration in the following statement:

“We reaffirm the importance of the precautionary principle as a risk management tool, and we therefore recommend that it should be applied where the possibility of serious or irreversible damage to health or the environment has been identified and where scientific evaluation, based on available data, proves inconclusive for assessing the existence of risk and its level but is deemed to be sufficient to warrant passing from inactivity to policy alternatives.”

The WHO working paper for the Budapest conference, “Dealing with uncertainty – how can the precautionary principle help protect the future of our children?” further reiterates the need to use a precautionary approach to children’s environmental health issues.

In 2005, WHO organised a “brainstorming” meeting to orient further work for the development, understanding and application of methods and tools to protect public health and welfare under scientific uncertainty. The meeting, entitled “Dealing with uncertainty: setting the agenda for the 5th Ministerial Conference in environment and health, 2009” ([http://www.euro.who.int/Document/HMS/uncertainty\\_mtgrep.pdf](http://www.euro.who.int/Document/HMS/uncertainty_mtgrep.pdf)), was organised in response to a request from Member States for “concrete guidance”, “guidelines for practical implementation”, and even checklists to help in dealing with uncertainty. As a result of the conference, a number of recommendations were established falling into three categories: action agenda, research agenda, and interface agenda.

Most recently, in 2006, the WHO, at a joint symposium with the EC JRC on “Uncertainty, complexity and precaution in environmental health” ([http://www.euro.who.int/healthimpact/MainActs/20060824\\_1](http://www.euro.who.int/healthimpact/MainActs/20060824_1)), evaluated the concepts, tools and methodologies available to deal with uncertainty in policy relating the knowledge on environmental health.

## 4. WHERE TO GO TO GET INVOLVED

### 4.1. ACTORS

#### 4.1.1. European Union

The European Union EU is a grouping of 27 democratic European countries that have established common institutions in order to work together for peace and prosperity. The EU is founded on four treaties, which are the basis for everything the EU does:

- The Treaty establishing the European Coal and Steel Community (1951)
- The Treaty establishing the European Economic Community (TEEC) (1957)
- The Treaty establishing the European Atomic Energy Community (1957)
- The Treaty on the European Union (TEU) (1993)

Other key treaties include:

- The Single European Act (SEA), which amended the EEC Treaty, paving the way for the single market. Entered into force in 1987.
- The Treaty of Amsterdam, which amended the EU and EEC treaties. Entered into force in 1999.
- The Treaty of Nice, which streamlines the EU's decision-making process to enable it to work effectively after enlargement. Entered into force in 2003.

In June 2004, the EU's presidents and prime ministers decided to simplify the current list of treaties and increase transparency in the EU's decision-making system, replacing all existing treaties with a single Constitution that would clearly set out what the EU is, how it takes decisions and who is responsible for doing what. The adoption of the Constitution is subject to ratification. Following "no" votes in France and the Netherlands, the Council announced a period of reflection on the future of the Constitutional Treaty.



At the June 2007 summit, EU leaders agreed to abandon the Constitutional Treaty and to draft a new Reform Treaty that will amend the existing treaties. The [conclusions of the 2007 Council summit](#) outline [the mandate of an Intergovernmental Conference \(IGC\)](#), which is to draw up a new Treaty on institutional reform by the end of 2007. If ratified, this treaty could enter into force in June 2009, ahead of the next European Parliament elections. At an informal summit **on 18 and 19 October 2007, the heads of State and Government agreed on the final version of the Reform Treaty** to be signed off on 13 December 2007.

## 1) EU Institutions

### **European Commission** ([http://ec.europa.eu/index\\_en.htm](http://ec.europa.eu/index_en.htm))

The European Commission is the Community's executive arm and guardian of the Treaties. It is independent of national governments and upholds the common European interest. The Commission is responsible for drafting laws, and managing the day-to-day business of implementing EU policies and spending EU funds. If necessary, it can also take rule-breakers to the Court of Justice. The Commission President and his college of 26 Commissioners are appointed for a period of five years.

### **European Parliament (EP)** ([http://www.europarl.europa.eu/news/public/default\\_en.htm](http://www.europarl.europa.eu/news/public/default_en.htm))

The European Parliament is elected every five years by the people of Europe to represent their interests. Members sit in seven Europe-wide political groups that include the centre-right European People's Party, Socialists, Liberals and Greens. Members are also divided among twenty specialised standing committees, which undertake preparatory work for Parliamentary plenary sittings. (For a list of parliamentary committees please see: <http://www.europarl.europa.eu/activities/expert/committees.do?language=EN>). The Parliament can also set up sub-committees and temporary committees to deal with specific issues, such as climate change.

The Parliament's primary role is to pass European "laws" and, together with the Council, to approve the EU budget. However, the EP also has the power to censure the Commission, to refuse new members and to interrogate the Council and Commission via written and oral questions. It has one president, 5 vice presidents and 20 committees, which prepare Parliament's debates. The present parliament was elected in 2004 will remain until 2009. It has 785 members across 27 countries.

## The Council of the European Union

(<http://www.consilium.europa.eu/showPage.ASP?lang=en>)

The Council of the European Union (formerly the Council of Ministers) is the Union's other legislative body. It shares responsibility with the parliament for passing laws and approving the EU budget and is responsible for economic coordination. The Council consists of ministers from the national governments of Member States. The number of votes each country has in the Council reflects the size of the country's population, though it is weighted in favour of smaller countries. Decisions are taken by qualified majority vote except those relating to sensitive issues where unanimity is required. The Council presidency rotates and is held by each Member State in turn for a six-month period.

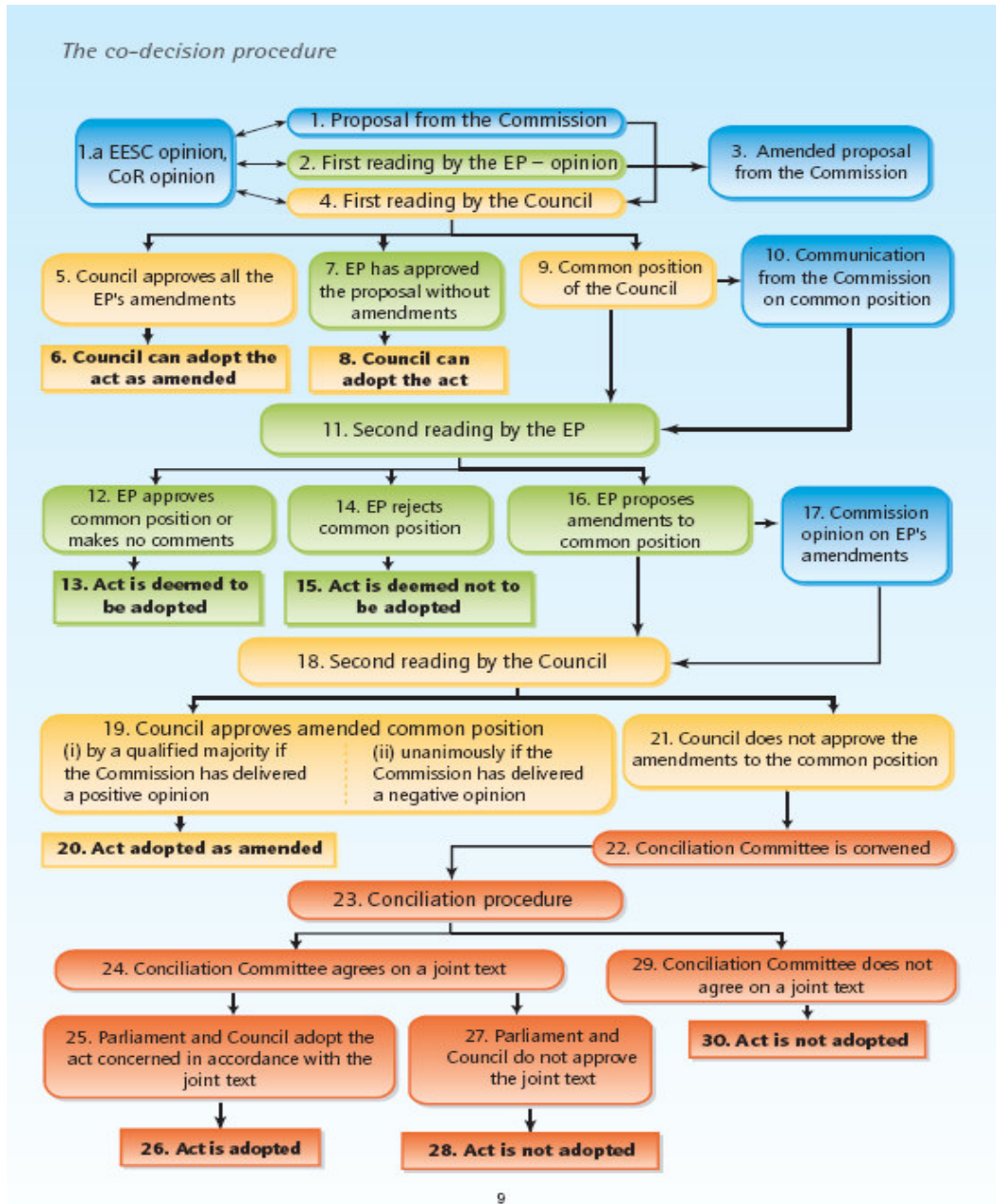
COREPER, the Permanent Representatives Committee is responsible for preparing the work of the Council and supervising its specialised committees and working groups. It consists of the Member States' permanent representatives to the EU and occupies a key position in the decision-making system. COREPER is divided into COREPER I, which consists of deputy permanent representatives and deals with technical matters, and COREPER II, which consists of ambassadors and deals with political, commercial, economic and institutional affairs.

Other important EU institutions include: the Court of Justice (<http://www.curia.europa.eu/en/transitpage.htm>), the Court of Auditors ([http://www.eca.europa.eu/index\\_en.htm](http://www.eca.europa.eu/index_en.htm)), European Economic and Social Committee (EESC) ([http://eesc.europa.eu/index\\_en.asp](http://eesc.europa.eu/index_en.asp)), the Committee of the Regions (CoR) (<http://www.cor.europa.eu/en/index.htm>), the European Central Bank (<http://www.ecb.eu/home/html/index.en.html>), and the European Investment Bank (<http://www.eib.europa.eu/>).

## 2) Decision-making in the EU

Decision-making at the European Union level principally involves the European Commission, the European Parliament (EP), and the Council of the European Union. Generally, the Commission proposes new legislation, which is then passed by the Council and Parliament, which share legislative power under the co-decision procedure. Areas under co-decision include: Health, Consumer Protection, Environment, Internal Market, Education, Equal Opportunities and Equal Treatment.

Figure 8.1.1 – Co-decision procedure



The European Commission, the only institution empowered to initiate legislation, presents “legislative texts” for which a Member of the European Parliament, working in conjunction with one of the parliamentary committees, will draw up a report. The Parliamentary Committee votes on the report and may amend it. The Parliament adopts its position after the text is revised and adopted in plenary.

Under the co-decision procedure, the same weight is given to European Parliament and the Council of the European Union on a wide range of areas. The Commission sends its proposals to the Parliament and the Council, which consider it on two successive occasions. Parliament has the right to approve Commission proposals, reject them or make amendments. In the case of the latter, the Commission considers all suggested changes. If any of the amendments are approved, it will send Council an amended proposal, which Council in turn can either adopt, or amend further.

If Council and Parliament cannot agree on a piece of legislation, it is put before the conciliation committee, which is made up of equal numbers of Parliament and Council representatives. The text agreed by the Committee is sent back to the Parliament and Council so that they can finally adopt it as law.

According to the assent procedure, Council has to obtain Parliament’s approval before very important decisions are taken. The procedure is similar to the co-decision procedure, except that Parliament cannot amend a proposal, it must either accept it, with an absolute majority, or reject it.

To follow the progress of legislative files see the Legislative Observatory of the European Parliament (OEIL): <http://www.europarl.europa.eu/oeil/>

### 3) Legislative Process

The main Community legal instruments are:

- \* Regulations: these are binding in their entirety and directly applicable in all Member States;
- \* Directives: these bind the Member States as to the results to be achieved; they have to be transposed into the national legal framework and thus leave margin for manoeuvre as to the form and means of implementation;
- \* Decisions: these are fully binding on those to whom they are addressed;

\* Recommendations and opinions: these are non-binding, declaratory instruments.

In addition to these instruments listed in Article 249 of the EC Treaty, practice has led to the development of a whole series of *sui generis* documents: interinstitutional agreements, resolutions, conclusions, communications, green papers and white papers.

Green papers are discussion documents released by the European Commission. They are intended to stimulate debate and launch a process of consultation at European level, on a particular topic. A green paper presents a range of ideas and is meant to invite interested individuals or organisations to contribute views and information.

A green paper may be followed by a white paper, an official set of proposals used as a vehicle for their development into law.

#### 4) Health and Environment in the EU

Although it is a relatively new policy area, up to 80% of environmental legislation comes from the EU. Environmental policy was first mentioned in the 1972 European Environmental Action Plan. It took on a more prominent role after the signing of the Single European Act (1986), which introduced the principle that environmental protection should be considered in all new Community legislation. Following this, EU environmental policy was substantially expanded by the Treaties of Maastricht (1992) and Amsterdam (1997), which made sustainable development one of the EU's central objectives.

Over the past 50 years, the EU has made considerable progress in helping to protect the environment and promote sustainable development. Member States have taken joint action to protect the environment in many areas, including: water, air, waste, and climate change.

In the Commission, relevant bodies dealing with health and environment (H&E) issues include:

- DG Environment ([http://ec.europa.eu/environment/index\\_en.htm](http://ec.europa.eu/environment/index_en.htm))
- DG SANCO ([http://ec.europa.eu/health/index\\_en.htm](http://ec.europa.eu/health/index_en.htm))
- Public Health Portal of the European Union ([http://ec.europa.eu/health-eu/index\\_en.htm](http://ec.europa.eu/health-eu/index_en.htm))
- European Portal on Sustainable Development ([http://ec.europa.eu/sustainable/welcome/index\\_en.htm](http://ec.europa.eu/sustainable/welcome/index_en.htm))

Within the European Parliament the relevant Committees dealings with H&E issues include:

- The Committee on the Environment, Public health and Food Safety (ENVI) ([http://www.europarl.europa.eu/comparl/envi/default\\_en.htm](http://www.europarl.europa.eu/comparl/envi/default_en.htm))

In the Council, information pertaining to H&E can be found at the following:

- Environment ([http://www.consilium.europa.eu/cms3\\_applications/applications/newsRoom/loadBook.asp?BID=89&LANG=1&cmsid=356](http://www.consilium.europa.eu/cms3_applications/applications/newsRoom/loadBook.asp?BID=89&LANG=1&cmsid=356))
- Employment, Social Policy, health and Consumer Affairs ([http://www.consilium.europa.eu/cms3\\_applications/applications/newsRoom/loadBook.asp?BID=79&LANG=1&cmsid=351](http://www.consilium.europa.eu/cms3_applications/applications/newsRoom/loadBook.asp?BID=79&LANG=1&cmsid=351))

In addition to these, there is the European Foundation for the Improvement of Living and Working Conditions (<http://www.eurofound.europa.eu/index.htm>); the European Agency for Safety and Health at Work (<http://osha.europa.eu/OSHA/>); the European Food Safety Authority (EFSA) (<http://www.efsa.europa.eu/en.html>); the European Medicines Agency (EMA) (<http://www.emea.europa.eu/>); the European Environment Agency (<http://www.eea.europa.eu/>); and the European Centre for Disease Prevention and Control (ECDC) – (<http://www.ecdc.eu.int/>) and the newly established European Chemicals Agency (ECHA) - <http://ec.europa.eu/echa/>

## 5) Influencing EU policy

Contrary to popular belief, the EU is very much open to democratic influence. All major EU decisions must be approved by elected politicians. National ministers sitting in the Council and Members of the European Parliament (MEPs) are sensitive to representations from interest groups and comment in the media. The key to successful lobbying both at national and EU level is making your intervention at the right time in the decision making process, having a clear set of demands, and making a convincing political case why they should be accepted. The added complication of lobbying at EU level is that decisions require a high degree of consensus across national and political lines.

Your local MEP, or an MEP who takes a special interest in the relevant topic, can be a helpful ally in raising an issue and asking formal questions to the Commission about it. In some instances MEPs may even take up a cause as their own and lobby it for you. Generally though, influencing policy will require a sustained effort over many months, and even years.

The EU policy-making process is relatively "transparent" inasmuch as the dates of meetings and the documents discussed are fairly easily available. The Commission and Parliament make most of their documents available on the Internet, usually within a day of them being published. The court's judgments from 1997 onwards are available on its web site. The council of ministers makes available an online database of its internal documents (<http://register.consilium.eu.int/utfregister/frames/introfsEN.htm>).

The Commission has also recently adopted a Green Paper on a European Transparency Initiative. For more information see the European Transparency Initiative ([http://ec.europa.eu/commission\\_barroso/kallas/transparency\\_en.htm#1](http://ec.europa.eu/commission_barroso/kallas/transparency_en.htm#1)).

Information on the Commission consultation process and relationship with NGOs can be found on the European Commission and Civil Society (CONECCS) website ([http://ec.europa.eu/civil\\_society/coneccs/index\\_en.htm](http://ec.europa.eu/civil_society/coneccs/index_en.htm)), which aims to provide information on the committees and other Commission frameworks through which the civil society organisations are consulted in a formal or structured way.

#### 4.1.2. The UN System

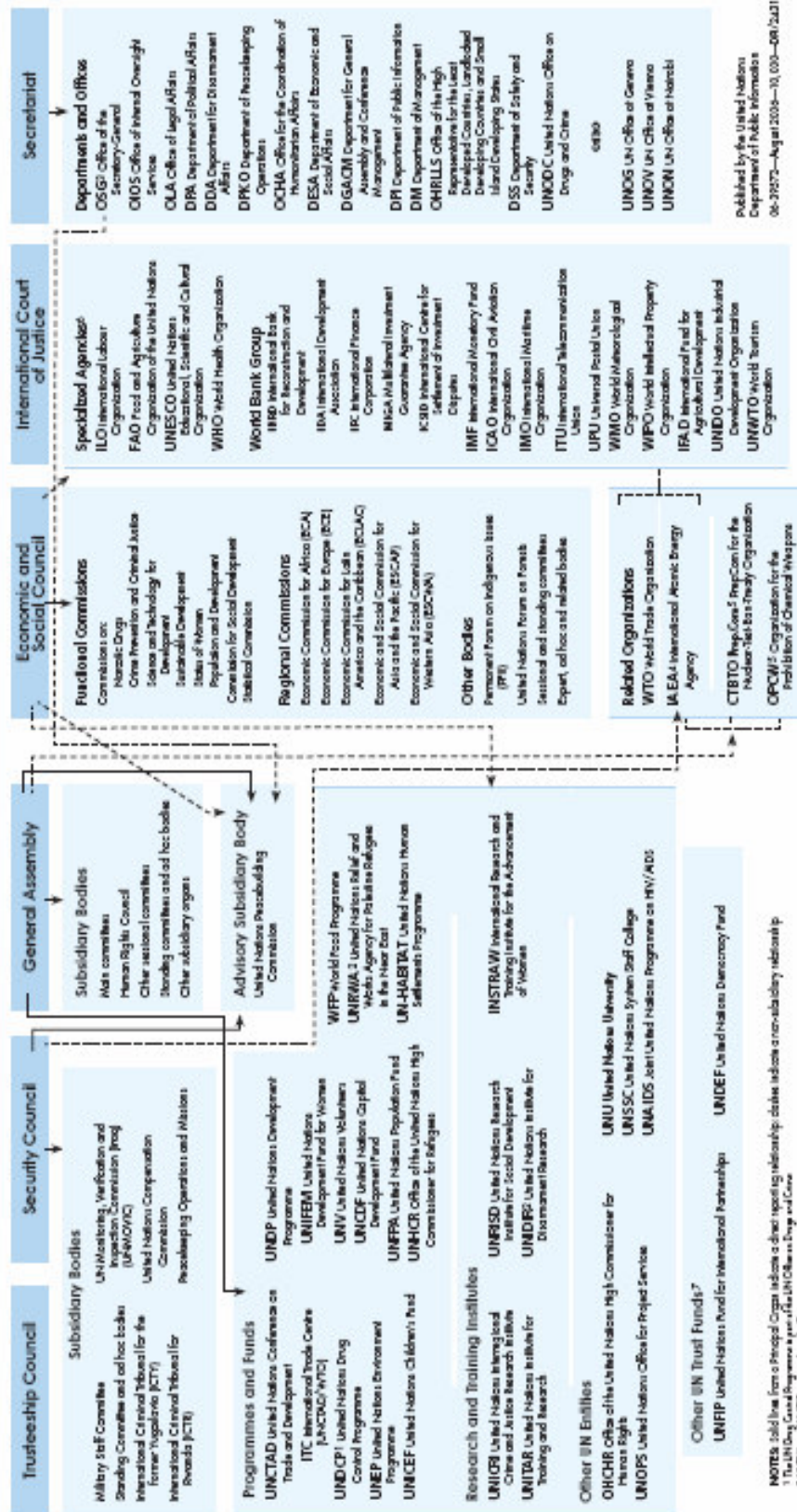
The United Nations (UN) was founded on the 24 October 1945 after the ratification of the United Nations Charter. According to the Charter, which sets out the rights and obligations of Member States and establishes the Organisation's organs and procedures, the purpose of the UN is to maintain international peace; to develop friendly relations among nations; to cooperate in solving international, economic, social, cultural and humanitarian problems and in promoting respect for human rights and fundamental freedoms; and to be the centre for harmonizing the actions of nations and attaining their needs. Currently, there are 192 Member States.

There are six principal UN organs: General Assembly, Security Council, Economic and Social Council, Trusteeship Council, International Court of Justice, and the Secretariat. A detailed organigram of the United Nations System can be found at: <http://www.un.org/aboutun/chart.html>



# The United Nations System

## Principal Organs



06-37073—April 2005—13, 000—001/2/2/1

**NOTES:** Solid lines from a principal organ indicate a direct reporting relationship; dashed lines indicate a non-visibility relationship.  
 1 UNMOVIC is a special programme of the UN Disarmament Commission.  
 2 The United Nations Joint Military Observer Group (UN Truce Supervision Organization) is a subsidiary body of the Security Council.  
 3 The United Nations Office of the High Commissioner for Human Rights (OHCHR) is a subsidiary body of the General Assembly.  
 4 The United Nations Office of the High Commissioner for Refugees (UNHCR) is a subsidiary body of the General Assembly.  
 5 The United Nations Office of the High Commissioner for Human Rights (OHCHR) is a subsidiary body of the General Assembly.  
 6 The United Nations Office of the High Commissioner for Human Rights (OHCHR) is a subsidiary body of the General Assembly.  
 7 UNHCR is an autonomous body that reports under its mandate to the United Nations Security Council. UNHCR's mandate is to provide international protection for refugees and to assist them to return to their country of origin or to other countries where they can obtain permanent protection.





Most of the entities of the UN system relevant for environment and health are linked to the Economic and Social Council (ECOSOC). (<http://www.un.org/esa/>). There are nine Functional Commissions directly depending on the ECOSOC. One of these is the Commission for Sustainable Development (CSD) (<http://www.un.org/esa/sustdev/csd.htm>)

Furthermore there are five Regional Commissions with important environmental activities:

- Economic Commission for Africa (ECA) - Addis Ababa, Ethiopia (<http://www.uneca.org/>)
- Economic Commission for Europe (ECE) - Geneva, Switzerland (<http://www.unece.org/>)
- Economic Commission for Latin America and the Caribbean (ECLAC) - Santiago, Chile (<http://www.eclac.org/>)
- Economic and Social Commission for Asia and the Pacific (ESCAP) - Bangkok, Thailand (<http://www.unescap.org/>)
- Economic and Social Commission for Western Asia (ESCWA) - Beirut, Lebanon (<http://www.escwa.org.lb/>)

Of the 12 Programmes and Funds depending on the UN ECOSOC the following are relevant for E&H:

- United Nations Children's Fund (UNICEF) - New York, USA (<http://www.unicef.org/>)
- United Nations Development Programme (UNDP) - New York, USA (<http://www.undp.org/>)
- United Nations Environment Programme (UNEP) - Nairobi, Kenya (<http://www.unep.org/>)
- United Nations Population Fund (UNFPA) - New York, USA (<http://www.unfpa.org/>)
- World Food Programme (WFP) - Rome, Italy (<http://www.wfp.org/>)

The United Nations Centre for Human Settlements (Habitat) (UNCHS) - Nairobi, Kenya (<http://www.unchcs.org/>) is not a formal programme but another UN entity.

The 18 Specialised Agencies are autonomous organisations with a separate membership. They belong to the UN system and each other through the coordinating machinery of the ECOSOC. Those relevant for E&H are:

- Food and Agriculture Organization (FAO) in Rome, Italy (<http://www.fao.org/>)
- United Nations Educational, Scientific and Cultural Organization (UNESCO) - Paris, France (<http://www.unesco.org/>)
- World Bank Group (WB) - Washington, USA (<http://www.worldbank.org/>)

- World Health Organization (WHO) - Geneva, Switzerland (<http://www.who.int/>)
- World Meteorological Organization (WMO) - Geneva, Switzerland (<http://www.wmo.ch/>)

In the field of the environment, governments have concluded many binding international treaties at the global or regional level. Some of these conventions have their own secretariat structure such as:

- The United Nations Framework Convention on Climate Change (UNFCCC) - Bonn, Germany (<http://www.unfccc.int/>) together with the Kyoto Protocol.

Others are administrated directly by UNEP in Nairobi or Geneva:

- Basel Convention on Transboundary Movements of Hazardous Wastes and their Disposal (<http://www.unep.ch/basel/index.html>)
- Vienna Convention for the Protection of the Ozone Layer with the Montreal Protocol on Substances that Deplete the Ozone Layer (<http://www.unep.ch/ozone/home.htm>)
- Convention on Trade in Dangerous Chemicals and Pesticides (PIC) (<http://irptc.unep.ch/pic/>)
- Stockholm Convention on Persistent Organic Pollutants (POPs) (<http://irptc.unep.ch/pops/>)

The World Trade Organization (WTO) - Geneva, Switzerland (<http://www.wto.org/>) is formally not part of the UN System.

### **World Health Organisation (WHO)**

The WHO (<http://www.who.int>) is probably the single most important player on international environment and health issues. It deserves special attention.

WHO Headquarters (HQ) in Geneva is organised in nine clusters. The cluster on Sustainable Development and Healthy Environment includes a department on the Protection of the Human Environment (<http://www.who.int/peh/>) which itself includes units on chemical safety (<http://www.who.int/pcs/>), food safety (<http://www.who.int/fsf/>), occupational and environmental health and water, sanitation and health ([http://www.who.int/water\\_sanitation\\_health/index.html](http://www.who.int/water_sanitation_health/index.html)) The other departments of this cluster are Health in Sustainable Development, Nutrition for Health and Development (<http://www.who.int/nut/>) and Emergency and Humanitarian Action (<http://www.who.int/disasters/>).

In addition to its headquarters, the WHO has six Regional Offices often with specific centres for environment and health:

- WHO Regional Office for Africa (WHO AFRO) in Harare Zimbabwe (<http://www.whoafr.org/>) has a Division of Healthy Environments in Sustainable Development (DES) (<http://www.whoafr.org/des/index.html>)  
(List of country offices: <http://www.whoafr.org/download/wr.pdf>)
- WHO Regional Office for Europe (WHO EURO) in Copenhagen, Denmark, covers 53 member states, not only those in the EU but also central and eastern Europe and countries of the former USSR ([www.euro.who.int](http://www.euro.who.int)). It acts as secretariat for the European Environment and Health Committee EEHC ([www.eech.dk](http://www.eech.dk)) – for more information please see the primer background chapter. An overview on its environment and health activities can be found under <http://www.euro.who.int/healthtopics#ENVNHEALTH> and the European Centre for Environment and Health with units in Rome, Italy (<http://www.euro.who.int/ecehrome>) and Bonn, Germany (<http://www.euro.who.int/ecehbonn>)  
(List of country offices: <http://www.euro.who.int/AboutWHO/About/WHOEuropeOffices>)
- WHO South East Asia Regional Office (WHO SEARO) in New Delhi, India (<http://w3.whosea.org/>) has a department on environmental health (<http://w3.whosea.org/techinfo/environmf.htm>)
- Pan-American Health Organisation PAHO and WHO Regional Office for the Americas in Washington DC, USA (<http://www.paho.org>) has a Division of Health and Environment (<http://www.paho.org/project.asp?SEL=OR&LNG=ENG&U=HEP>) as does the Panamerican Center for Sanitary Engineering and Environmental Sciences (CEPIS) in Lima, Peru (<http://www.cepis.ops-oms.org/indexeng.html>). (List of country offices: <http://www.paho.org/english/dbi/ecp/fieldoffices.htm>)
- Regional Office for the Eastern Mediterranean (EMRO) in Cairo, Egypt (<http://www.emro.who.int/>) has a Centre for Environmental Health Activities (CEHA) in Amman, Jordan (<http://www.emro.who.int/ceha/>). (List of country offices: <http://www.emro.who.int/WRslist.htm>)
- Regional Office for the Western Pacific (WPRO), Manila, Philippines (<http://www.wpro.who.int/>) has a focus on environment (<http://www.wpro.who.int/themes/focuses/theme2/focus1/t2f1.asp>)

The WHO is also present in many countries through country offices dependent on the Regional Offices. (List of country offices: [http://www.wpro.who.int/country\\_office.asp](http://www.wpro.who.int/country_office.asp))

In addition to the regional offices, WHO has offices at the European Union in Brussels, in Washington, and at the UN in New York.

The International Agency for Research on Cancer (IARC) in Lyon, France (<http://www.iarc.fr/>) is a “daughter organisation” of WHO.

WHO has accorded to many research institutions around the world the status of WHO Collaborative Centre (<http://whqlily.who.int/>). This database is a valuable resource for links to scientific and research institutions.

*Source of information: Primer on International Environment and Health Politics. Gaudenz Silberschmidt ([gs@isde.org](mailto:gs@isde.org)) International Society of Doctors for the Environment, ISDE [www.isde.org](http://www.isde.org) Version of 11 July 2002.*

### 4.1.3. Non Governmental Organisations

In its broadest sense, a non-governmental organization (NGO) is an association which is not directly part of the structure of government, and whose work is based on the common interests of its members, individuals, or institutions. NGOs are generally understood to be committed to addressing social needs, working at the local, national and international level. As key contributors to the policy making and political decision-making process, they play an important role in democratic society. Their role is recognized in Article 47 of the Constitutional Treaty, which sets consultation with civil society as one of the elements of a participative democracy.

NGOs have been contributing to public health and environmental protection for centuries. Recently however, the increasing numbers of NGOs and their growing influence has profoundly affected the concepts underpinning public health, together with the formulation and implementation of public health programmes and policies. NGOs and other civil society actors have engaged with the EU and WHO to implement health programmes at country level, made outreach to remote areas and populations possible, advocated public health issues to a broad audience, addressed sensitive issues, and worked in alliance with the EU and WHO to raise funds more effectively.

One of the key roles that NGOs play is as implementation watchdogs, putting pressure on both governments and target groups. This role was strengthened by EU participation in the Aarhus Convention. Recently, policy preparation at EU level has become more participatory. Environmental NGOs are now invited to play a role in committees, expert networks and numerous consultation processes, which helps to counterbalance influential industry lobbying at all levels of the EU institutions.

However, green NGOs tend to be outmatched by industry. Despite having played an instrumental role in governmental regulation that forced the greening of industry since the UN Conference on Human Development in Stockholm in 1972, NGOs still face strong industry opposition on many issues. Consequently, environmental policy is formed and implemented by governments at an often tense interface. To create a more level playing field, the European Commission has created a number of financial instruments that make funding available to NGOs. For more information please see the Commission website ([http://ec.europa.eu/environment/funding/intro\\_en.htm](http://ec.europa.eu/environment/funding/intro_en.htm)).

There are many health and environment advocacy NGOs working at the European level, dedicated to advocacy and communicating about environmental health issues. Below is a list of organisations working on such issues, including some European Public Health Alliance (EPHA) (<http://www.epha.org/>) and Health and Environment Alliance (HEAL) member organisations. Their websites offer useful information in specific issues, target groups and settings.

Association of European Cancer Leagues - <a href="http://www.europeancancerleagues.org/">http://www.europeancancerleagues.org/</a>	
BEUC – The European Consumers’ Organisations - <a href="http://www.beuc.org">http://www.beuc.org</a>	
<a href="http://www.climnet.org/">Climate Action Network Europe</a> - <a href="http://www.climnet.org/">http://www.climnet.org/</a>	
EuroHealthNet - <a href="http://www.eurohealthnet.eu/">http://www.eurohealthnet.eu/</a>	
Europa Donna (European Breast Cancer Coalition) - <a href="http://www.cancerworld.org/cancerworld/home.aspx?id_sito=5&amp;id_stato=1">http://www.cancerworld.org/cancerworld/home.aspx?id_sito=5&amp;id_stato=1</a>	-
European Academy of Allergology and Clinical Immunology - <a href="http://www.eaaci.net/site/homepage.php">http://www.eaaci.net/site/homepage.php</a>	-
European Association of Hospital Managers (Belgium) – <a href="http://www.eahm.eu.org/">http://www.eahm.eu.org/</a>	
European Child Safety Alliance - <a href="http://www.eurosafe.eu.com/csi/eurosafe2006.nsf/wwwVwContent/l2europeanchildsafetyalliance.htm">http://www.eurosafe.eu.com/csi/eurosafe2006.nsf/wwwVwContent/l2europeanchildsafetyalliance.htm</a>	-
European Council for Classical Homeopathy - <a href="http://www.homeopathy-ecch.org/">http://www.homeopathy-ecch.org/</a>	
European Disability Forum - <a href="http://www.edf-feph.org/">http://www.edf-feph.org/</a>	
European Environment Bureau – <a href="http://www.eeb.org">http://www.eeb.org</a>	

European Federation for Transport and Environment T&E - <http://www.transportenvironment.org/>  
 European Federation of Allergy and Airways Disease Patients' Associations - <http://www.efanet.org/>  
 European Federation of Nurses Association (EFN) (Formerly Standing Committee of Nurses of the EU) (Belgium) - <http://www.efnweb.org/version1/en/index.html>  
 European Heart Network - <http://www.efanet.org/>  
 European Lung Foundation - <http://www.european-lung-foundation.org/>  
 European Network for Smoking Prevention - <http://www.ensp.org/>  
 European Public Health Alliance (EPHA) – <http://www.epha.org>  
 European Respiratory Society - <http://wwwdev.ersnet.org/>  
 Federation of European Cancer Societies (Belgium) - <http://www.fecs.be/emc.asp>  
 Friends of the Earth Europe – <http://www.foeeurope.org>  
[Greenpeace European Unit](http://eu.greenpeace.org/) - <http://eu.greenpeace.org/>  
 Health Action International – Europe - <http://www.haiweb.org/>  
 Health Care Without Harm (HCWH) - <http://www.noharm.org/>  
 Health and Environment Alliance (HEAL) – <http://www.env-health.org>  
 International Baby Food Action Network (IBFAN) –  
<http://www.ibfan.org/site2005/Pages/index2.php?iui=1>  
 International Network on Children's Health, Environment and Safety (INCHES) -  
<http://www.inchesnetwork.net/>  
 International Society of Doctors for the Environment– <http://www.isde.org/>  
 Mental Health Europe - <http://www.mhe-sme.org/>  
 Pesticides Action Network (PAN) Europe - <http://www.pan-europe.info/>  
 Standing Committee of European Doctors - <http://www.cpme.be/>  
 Women in Europe of a Common Future (WECF) - <http://www.wecf.org/>  
 World Cancer Research Fund International - <http://www.wcrf.org/>  
 WWF European Office -  
[http://www.panda.org/about\\_wwf/where\\_we\\_work/europe/what\\_we\\_do/epo/index.cfm](http://www.panda.org/about_wwf/where_we_work/europe/what_we_do/epo/index.cfm)

## 4.2. USEFUL WEBSITES:

- DG Environment – [http://ec.europa.eu/environment/index\\_en.htm](http://ec.europa.eu/environment/index_en.htm)
- DG SANCO - [http://ec.europa.eu/dgs/health\\_consumer/index\\_en.htm](http://ec.europa.eu/dgs/health_consumer/index_en.htm)
- European Observatory on Health Systems and Policies - <http://www.euro.who.int/observatory>
- Environment and Health Information System (EHIS) - <http://www.euro.who.int/EHIndicators>
- European Agency for Safety and Health at Work (<http://osha.europa.eu/OSHA/>)
- European Centre for Disease Prevention and Control (ECDC) – (<http://www.ecdc.eu.int/>)
- European Environment Agency - <http://www.eea.europa.eu/>
- European Environment and Health Committee- <http://www.euro.who.int/eehc>
- European Environment and Health Homepage [http://ec.europa.eu/environment/health/index\\_en.htm](http://ec.europa.eu/environment/health/index_en.htm)
- European Food Safety Authority (EFSA) (<http://www.efsa.europa.eu/en.html>) –
- European Foundation for the Improvement of Living and Working Conditions - (<http://www.eurofound.europa.eu/index.htm>)
- European Health Portal: <http://ec.europa.eu/health-eu/>
- European Information and Observation Network (Eionet) <http://www.eionet.europa.eu/>
- European Medicines Agency (EMA) (<http://www.emea.europa.eu/>)
- European Parliament Committee on the Environment, Public Health and Food Safety (ENVI) - [http://www.europarl.europa.eu/comparl/envi/default\\_en.htm](http://www.europarl.europa.eu/comparl/envi/default_en.htm)
- European Portal on Sustainable Development ([http://ec.europa.eu/sustainable/welcome/index\\_en.htm](http://ec.europa.eu/sustainable/welcome/index_en.htm))
- Health and Environment Linkages Initiative (HELI) - <http://www.who.int/heli/en/>
- Joint Research Centre (JRC) - (<http://www.jrc.cec.eu.int/>)
- Legislative Observatory of the European Parliament (OEIL) <http://www.europarl.europa.eu/oeil/>
- WHO - <http://www.who.int/en/>

## 5. LIST OF ACRONYMS AND ABBREVIATIONS

<i>ACACIA</i>	<i>Concerted Action towards a Comprehensive Climate Impacts and Adaptations Assessment</i>
<i>AFRO</i>	<i>WHO Regional Office for Africa</i>
<i>AIDIS</i>	<i>Inter-American Association of Sanitary and Environmental Engineering</i>
<i>AIEH</i>	<i>Australian Institute of Environmental Health</i>
<i>APHA</i>	<i>American Public Health Association</i>
<i>BAT</i>	<i>Best Available Techniques</i>
<i>CAN</i>	<i>Climate Action Network</i>
<i>CAFÉ</i>	<i>Directive on Ambient Air Quality and Cleaner Air for Europe</i>
<i>CAPE</i>	<i>Canadian Association of Physicians for the Environment</i>
<i>CDC</i>	<i>US Centres for Disease Control and Prevention</i>
<i>CDM</i>	<i>Clean Development Mechanism</i>
<i>CEHA</i>	<i>Regional Centre for Environmental Health Activities of WHO EMRO</i>
<i>CEHAPE</i>	<i>Children's Environment and Health Action Plan for Europe</i>
<i>CEHN</i>	<i>Children's Environmental Health Network</i>
<i>CEN</i>	<i>European Committee for Standardisation</i>
<i>CENELEC</i>	<i>European Committee for Electro technical Standardisation</i>
<i>CEPIS</i>	<i>Panamerican Center for Sanitary Engineering and Environmental Sciences</i>
<i>CERs</i>	<i>Certified Emission Reductions</i>
<i>CICH</i>	<i>Canadian Institute of Child Health</i>
<i>CIEH</i>	<i>Chartered Institute of Environmental Health UK</i>
<i>COE</i>	<i>Council of Europe</i>
<i>CoR</i>	<i>Committee of the Regions</i>
<i>CSD</i>	<i>UN Commission on Sustainable Development</i>
<i>CSE</i>	<i>Centre for Science and Environment</i>
<i>CSTEE</i>	<i>Scientific Committee on Toxicity, Ecotoxicity and the Environment</i>
<i>DG</i>	<i>Directorate General of the European Commission</i>
<i>DG Env</i>	<i>European Commission Directorate General Environment</i>
<i>DG RECH</i>	<i>European Commission Directorate General Research</i>
<i>DG Sanco</i>	<i>European Commission Directorate General Health and Consumer Protection</i>
<i>DG TREN</i>	<i>European Commission Directorate General Transport and Energy</i>
<i>DPSEEA</i>	<i>Driving force, Pressure, State, Exposure, Effect, Action</i>
<i>EAP</i>	<i>Environmental Action Plan</i>
<i>E&amp;H</i>	<i>Environment and Health</i>



<i>EC</i>	<i>European Commission</i>
<i>ECA</i>	<i>UN Economic Commission for Africa</i>
<i>EEC-Net</i>	<i>European Consumer Centres Network</i>
<i>ECCP</i>	<i>European Climate Change Programme</i>
<i>ECE</i>	<i>UN Economic Commission for Europe</i>
<i>ECLAC</i>	<i>UN Economic Commission for Latin America and the Caribbean</i>
<i>ECMT</i>	<i>European Conference of Ministers of Transport</i>
<i>ECO</i>	<i>Environmental Citizens' Organisation</i>
<i>ECOSOC</i>	<i>Economic and Social Council of the UN</i>
<i>Eden</i>	<i>Emerging Diseases in a Changing European Environment</i>
<i>ECDC</i>	<i>European Centre for Disease Control</i>
<i>EDTA</i>	<i>Endocrine Disruptor Testing and Assessment Task Force</i>
<i>EEA</i>	<i>European Environment Agency</i>
<i>EEA</i>	<i>European Economic Area</i>
<i>EEB</i>	<i>European Environment Bureau</i>
<i>EEHC</i>	<i>European Environment and Health Committee</i>
<i>EFSA</i>	<i>European Food Safety Authority</i>
<i>EFTA</i>	<i>European Free Trade Association</i>
<i>E&amp;H</i>	<i>Environment and Health</i>
<i>EHIS</i>	<i>Environment and Health Information System</i>
<i>EMA</i>	<i>European Medicines Agency</i>
<i>EMF</i>	<i>Electromagnetic Fields</i>
<i>EMRO</i>	<i>Eastern Mediterranean Regional Office of WHO</i>
<i>ENVI</i>	<i>Committee on the Environment, Public Health and Food Safety</i>
<i>EP</i>	<i>European Parliament</i>
<i>EPHA</i>	<i>European Public Health Alliance</i>
<i>ERA-NET</i>	<i>European Research Area</i>
<i>ERC</i>	<i>European Research Council</i>
<i>ERUs</i>	<i>Emission Reduction Units</i>
<i>ESCAP</i>	<i>UN Economic and Social Commission for Asia and the Pacific</i>
<i>ESCWA</i>	<i>UN Economic and Social Commission for Western Asia</i>
<i>ESF</i>	<i>European Science Foundation</i>
<i>ETC/RWM</i>	<i>European Topic Centres/ Resource and Waste Management</i>
<i>ETSI</i>	<i>European Telecommunications Standards Institute</i>
<i>ETS</i>	<i>Environment Tobacco Smoke</i>
<i>EU</i>	<i>European Union</i>

<i>EUPHA</i>	<i>European Public Health Association</i>
<i>EURO</i>	<i>European Regional Office of WHO</i>
<i>ExIA</i>	<i>Extended Impact Assessment</i>
<i>FAO</i>	<i>Food and Agricultural Organisation</i>
<i>FP</i>	<i>Framework Programme</i>
<i>G 77</i>	<i>Group of 77 developing countries</i>
<i>G 8</i>	<i>Group of 8 major industrialized democracies</i>
<i>GEENET</i>	<i>Global Environmental Epidemiology Network</i>
<i>GELNET</i>	<i>Global Health and Environment Library Network</i>
<i>GHG</i>	<i>Greenhouse Gas</i>
<i>GMO</i>	<i>Genetically Modified Organisms</i>
<i>GO</i>	<i>Governmental Organisation</i>
<i>GPSD</i>	<i>General Product Safety Directive</i>
<i>HAI</i>	<i>Health Action International</i>
<i>HCWH</i>	<i>Health Care Without Harm</i>
<i>HEARTS</i>	<i>WHO Health effects and risk of transport systems</i>
<i>HELI</i>	<i>Health and Environment Linkages Initiative</i>
<i>HIA</i>	<i>Health Impact Assessment</i>
<i>HQ</i>	<i>Headquarters</i>
<i>IAEA</i>	<i>International Atomic Energy Agency</i>
<i>IARC</i>	<i>International Agency for Research on Cancer</i>
<i>IAQ</i>	<i>Indoor Air Quality</i>
<i>ICFTU</i>	<i>International Conference of Free Trade Unions</i>
<i>ICLEI</i>	<i>International Council of Local Environment Initiatives</i>
<i>ICPSC</i>	<i>International Consumer Product Safety Committee</i>
<i>ICSU</i>	<i>International Council for Science</i>
<i>IES</i>	<i>Institute for Environment and Sustainability</i>
<i>IFCS</i>	<i>Intergovernmental Forum on Chemical Safety</i>
<i>IFEH</i>	<i>International Federation of Environmental Health</i>
<i>IGO</i>	<i>Intergovernmental Organisation</i>
<i>IHDP</i>	<i>International Human Dimensions Programme</i>
<i>IHCP</i>	<i>Institute for Health and Consumer Protection</i>
<i>IISD</i>	<i>International Institute for Sustainable Development</i>
<i>ILO</i>	<i>International Labour Office</i>
<i>IMR</i>	<i>Intergovernmental Midterm Review</i>
<i>INCHES</i>	<i>International Network for Children's Health, Environment and Safety</i>

<i>IOMC</i>	<i>Inter-Organization Programme for the Sound Management of Chemicals</i>
<i>IPCC</i>	<i>Intergovernmental Panel on Climate Change</i>
<i>IPCS</i>	<i>International Programme on Chemical Safety</i>
<i>IPEN</i>	<i>International POP Elimination Network</i>
<i>IPPC</i>	<i>Integrated Pollution Prevention and Control</i>
<i>IPPNW</i>	<i>International Physicians for the Protection against Nuclear War</i>
<i>ISDE</i>	<i>International Society of Doctors for the Environment</i>
<i>ISEE</i>	<i>International Society of Environmental Epidemiology</i>
<i>ISEM</i>	<i>International Society of Environmental Medicine</i>
<i>JI</i>	<i>Joint Implementation</i>
<i>JRC</i>	<i>Joint Research Council</i>
<i>MEP</i>	<i>Member of the European Parliament</i>
<i>MRL</i>	<i>Maximum Residue Limit</i>
<i>MSF</i>	<i>Médecins Sans Frontières</i>
<i>NAPs</i>	<i>National Action Plans</i>
<i>NCEH</i>	<i>US National Centre for Environmental Health</i>
<i>NEC</i>	<i>National Emissions Ceilings</i>
<i>NGO</i>	<i>Non-Governmental Organisation</i>
<i>NO<sub>2</sub></i>	<i>Nitrogen Dioxide</i>
<i>OECD</i>	<i>Organisation of Economic Cooperation and Development</i>
<i>OEIL</i>	<i>Legislative Observatory of the European Parliament</i>
<i>OSHA</i>	<i>Occupational Safety and Health Administration</i>
<i>PAHO</i>	<i>Pan-American Health Organisation</i>
<i>PCB</i>	<i>Polychlorinated Biphenyls</i>
<i>PCC</i>	<i>Poison control centres</i>
<i>PIC</i>	<i>Prior Informed Consent (on Trade in Dangerous Chemicals and Pesticides)</i>
<i>PM</i>	<i>Particulate Matter</i>
<i>POJA</i>	<i>UNECE Programme of Joint Action on Transport and Environment</i>
<i>POP</i>	<i>Persistent Organic Pollutant</i>
<i>PPP</i>	<i>Plant Protection Products</i>
<i>PROSAFE</i>	<i>Product Safety Enforcement Forum for Europe</i>
<i>PRTR</i>	<i>Pollution Release and Transfer Register</i>
<i>PSI</i>	<i>Public Service International</i>
<i>RAPEX</i>	<i>Rapid Alert System for Non-Food Products</i>
<i>REACH</i>	<i>Registration, Evaluation, Authorisation of CHemicals</i>
<i>REC</i>	<i>Regional Environmental Centre for Central and Eastern Europe</i>

<i>REPIDISCA</i>	<i>Pan American Information Network on Environmental Health</i>
<i>RF</i>	<i>Radio Frequency Fields</i>
<i>RIPs</i>	<i>Reach Implementation Projects</i>
<i>RoHS</i>	<i>Restriction of the use of certain hazardous substances in electrical and electronic equipment</i>
<i>RPG</i>	<i>Regional Priority Goal</i>
<i>SAICM</i>	<i>Strategic Approach to International Chemicals Management</i>
<i>SCALE</i>	<i>Science, Children, Awareness, Legal Instrument, Evaluation</i>
<i>SCCP</i>	<i>Scientific Committee on Consumer Products</i>
<i>SEA</i>	<i>Single European Act</i>
<i>SEARO</i>	<i>WHO South East Asia Regional Office</i>
<i>SCHER</i>	<i>Scientific Committee on Health and Environmental Risks</i>
<i>SCENIHR</i>	<i>Scientific Committee on Emerging and Newly Identified Health Risks</i>
<i>SO<sub>2</sub></i>	<i>Sulphur Dioxide</i>
<i>UN</i>	<i>United Nations</i>
<i>UNCED</i>	<i>UN Conference on Environment and Development Rio 1992</i>
<i>UNCHS</i>	<i>UN Centre for Human Settlement Habitat</i>
<i>UNDP</i>	<i>United Nations Development Programme</i>
<i>UN-ECE</i>	<i>United Nations Economic Commission for Europe</i>
<i>UNEP</i>	<i>United Nations Environment Programme</i>
<i>UNESCO</i>	<i>United Nations Educational, Scientific and Cultural Organization</i>
<i>UNFCCC</i>	<i>United Nations Framework Convention on Climate Change</i>
<i>UNFPA</i>	<i>United Nations Population Fund</i>
<i>UNICEF</i>	<i>United Nations Children's Fund</i>
<i>USEPA</i>	<i>US Environment Protection Agency</i>
<i>USSR</i>	<i>Union of Soviet Socialist Republics`</i>
<i>UV</i>	<i>Ultraviolet</i>
<i>VOC</i>	<i>Volatile organic Compound</i>
<i>WB</i>	<i>World Bank</i>
<i>WBCSD</i>	<i>World Business Council for Sustainable Development</i>
<i>WFD</i>	<i>Water Framework Directive</i>
<i>WFP</i>	<i>World Food Programme</i>
<i>WFPHA</i>	<i>World Federation of Public Health Associations</i>
<i>WHO</i>	<i>World Health Organisation</i>
<i>WMO</i>	<i>World Meteorological Organization</i>
<i>WPRO</i>	<i>WHO Western Pacific Regional Office</i>

<i>WSSD</i>	<i>World Summit on Sustainable Development</i>
<i>WTO</i>	<i>World Trade Organisation</i>
<i>WWF</i>	<i>World Wide Fund for Nature</i>

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