World Health Organization
REGIONAL OFFICE FOR Europe

Healthy Environments for Healthier People

ABSTRACT

Over the past 20 years, the WHO European Centre for Environment and Health (WHO ECEH) has become a global centre of excellence in the field of environment and health. The Centre's work on evidence and normative guidance on environment and health issues endures to adhere to the highest standards of scientific and ethical integrity. This work has evolved to achieve increasing relevance and recognition as the prevalence of environment and health in policy has grown in both global and European contexts. For example, an emerging impetus for its work is given by the 2030 Agenda for Sustainable Development, in which health and well-being, linked to environmental and work-related factors are outcomes, determinants and enablers of sustainable development. This publication outlines the role of the Centre as the main driving force of the WHO Regional Office for Europe in the development of sound policy and technical guidance on environment and health.

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Content

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Our vision is safe and supportive living and working environments that both protect and promote health and well-being.

Dr Elizabet Paunovic
Head of the WHO European Centre for
Environment and Health

Foreword

The World Health Organization European Centre for Environment and Health was established in 1991 to tackle the most pressing environmental issues facing our region, and the world. In the almost 20 years since its establishment many things have changed; environment and health have become a higher priority for decision-makers, and the body of evidence supporting the need to encourage safer, more resilient communities has grown. In this time, we have also witnessed the establishment of a single office that houses the European Centre for Environment and Health in Bonn, Germany: a valuable resource that has proven its worth to the European Region and globally in many ways. This office is an integral part of WHO Regional Office for Europe, the Division of Policy and Governance for Health and Well-being.

Despite these many changes, the need for coordinated action on environment and health issues remains clear. Each year, at least 1.4 million Europeans still die prematurely as a consequence of polluted environments. The burden of environmental health issues still amounts to at least 15% of Europe's total deaths, so the mandate granted to this office remains as relevant and vital as ever.

The landscape of actors and stakeholders of the WHO European Region who are positioned to bring the necessary change is broad and dynamic. The challenges that we are required to overcome in order to solve these problems are complex and multidimensional, involving expertise and decision-making abilities that often lie outside the traditional arena of health.

Over recent years, the WHO European Centre for Environment and Health has actively contributed to strengthening the collaboration and synergies between institutions, governments and societies, including the broader public health community. I would like to take this opportunity to actively thank all of those who have contributed to this achievement since the establishment of the Centre and to recognize the efforts of our Member States that have worked to achieve great gains in this field.

Dr Elizabet Paunovic
Head of the WHO European Centre for
Environment and Health
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Achieving excellence through policy

HEALTH 2020

The WHO European Centre for Environment and Health works as the interface between science and policy for its Member States, giving support and aiming to translate science into policy advice. The Health 2020 policy framework, adopted across the European Region, provides a basis for improving health and reducing inequalities throughout the continent (Fig. 1).[1] More recently, WHO's work has also been driven by the 2030 Agenda for Sustainable Development and pursuit of its Sustainable Development Goals (SDGs) across the European Region. This is no small challenge as the SDGs cannot be addressed in isolation: the need remains for a multisector approach that includes research institutions, policy-makers and stakeholders (including citizens and their organizations) who may be directly affected.

Responding to this need, WHO ECEH delivers technical work on creating resilient communities and supportive environments and thus implementing the WHO Programme of Work in the area of Health and Environment.[2] The most recent products of the Centre's work in this area have been highly rated by Member States' representatives at the High-level Mid-term Review Meeting of the European Environment and Health Process, held in Haifa, Israel in April 2015, and at the 6th Ministerial Conference on Environment and Health in Ostrava, Czechia, in June 2017.

Fig. 1. The four priority areas of WHO's Health 2020 policy framework

THE 2030 SUSTAINABLE DEVELOPMENT GOALS

An emerging impetus for the work of the WHO European Centre for Environment and Health is given by the 2030 Agenda for Sustainable Development, in which health and well-being linked to environmental and work-related factors are outcomes, determinants and enablers of sustainable development. The Centre is supporting the Member States of the WHO European Region in implementing the health and environment dimensions of the Sustainable Development Goals (SDGs) (Fig. 2).[3] The SDGs are seen as integrated and indivisible; they cover the economic, environmental and social pillars of sustainable development, with a strong focus on equity expressed by "Leaving no one behind".[4]

While the dedicated health goal, SDG 3: *Good health and well-being*, is central and provides several environmental determinants of health, health improvement and bridging the equity gap in health is a developmental goal in itself and a target of many other goals. Indeed, environmental determinants of health are directly or indirectly relevant to all SDGs, as shown in Fig. 3. Examples of the interlinkages include SDG 4: *Quality education* (e.g. by reducing exposure of children to neurodevelopmental toxins, or providing safe water, sanitation and hygiene services in schools); SDG 5: *Gender equality* (e.g. by reducing disproportionate exposure of women to indoor air pollution); SDG 6: *Clean water and sanitation* (e.g. by providing safe, sustainable and equitable access to water and sanitation services that are protective of health and the environment); and SDG 14: *Life below water* (e.g. by reducing chemical contamination of marine species and food chains). WHO ECEH remains committed to ensuring progress towards the global SDGs through its work in all areas. SDG 13: *Climate action* also holds significant cross-cutting relevance, as does SDG 11: *Sustainable cities and communities*, which is a priority area for WHO's Health 2020 policy framework.

Fig. 2. The 17 Sustainable Development Goals

Fig. 3. Environmental health links to the 2030 SDGs [5]

THE EUROPEAN ENVIRONMENT AND HEALTH PROCESS

The WHO European Centre for Environment and Health was established by decision of the First Ministerial Conference on Environment and Health, together with the United Nations Economic Commission for Europe (UNECE) and other partners, who in 1989 initiated the European Environment and Health Process (EHP).[6]

Through the EHP, WHO ECEH provides overall strategic guidance and sets implementation priorities for the reduction of environmental health risks in the European Region.

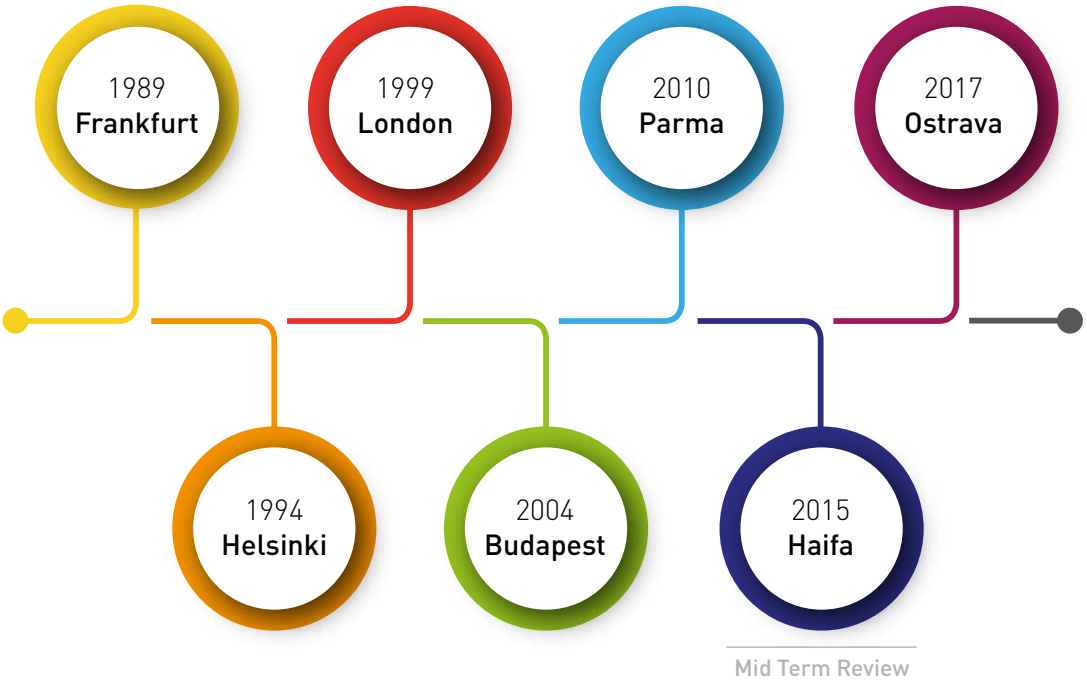
OSTRAVA DECLARATION

Since the initiation of the EHP, ministers from the WHO European Region have come together periodically to assess and renew their commitments to it. The most recent ministerial meeting, held in June 2017 in Ostrava, Czechia, resulted in the Ostrava Declaration on Environment and Health, which was the product of a long-standing intersectoral collaboration led by the European Environment and Health Task Force (Fig. 4).[7] The Declaration prioritized the following areas:

- improving indoor and outdoor air quality;
- ensuring universal, equitable and sustainable access to safe drinking-water;
- minimizing the adverse effects of chemicals on human health;
- preventing and eliminating adverse environmental and health effects, costs and inequalities related to waste management and contaminated sites;
- strengthening adaptive capacities and resilience to health risks related to climate change and supporting the measures to mitigate climate change;
- supporting the efforts of European cities and regions to become healthier and more inclusive; and
- building environmental sustainability of health systems.

WHO ECEH is proud to address the need to develop public health evidence and arguments to support systematic policy development and interventions which solve the most pressing and often complex environmental issues facing health.

Fig. 4. The series of ministerial conferences leading to the Ostrava Declaration of 2017



Achieving technical excellence in Europe

The WHO European Centre for Environment and Health is a geographically dispersed office and integral component of the WHO Regional Office for Europe and the Division of Policy and Governance for Health and Well-being. Proudly promoting a culture of technical excellence in its work, WHO ECEH acts to generate evidence and normative guidance which adheres to the highest standards of scientific and ethical integrity. It also collaborates with a range of partners who represent the highest expertise in their field, aiming to encourage a culture of collaboration to achieve a common goal of technical excellence in Europe and beyond.

The office acts as an important source of knowledge and institutional capacity for WHO globally; it represents 35% of total staff working on environment and health across WHO headquarters and all six regional offices. Globally, WHO ECEH plays a leading role in various kinds of work on behalf of WHO; some of the areas in which the Centre has been engaged include:

- revising global WHO guidelines on air quality;[8]
- developing harmonized global human biomonitoring of mercury exposure;[9]
- developing electronic tools to quantify the impacts of air quality on health;[10]
- revising and developing WHO noise guidelines for Europe (the first of its kind globally);
- carrying out pioneering work on climate change and health.

WHO ECEH remains loyal to its mandate regarding Member States of the WHO European Region; nevertheless, its normative work on policy and guidance has a global relevance and reach. The growing influence of the Centre is mirrored in the year-on-year rise in the number of citations it receives in online publications (Fig. 5); in total, it has received 3087 such citations since 2011. The global reach of the Centre is shown by the top locations of citations (Fig. 6).

Fig. 5. Citations of WHO ECEH in online publications since 2011

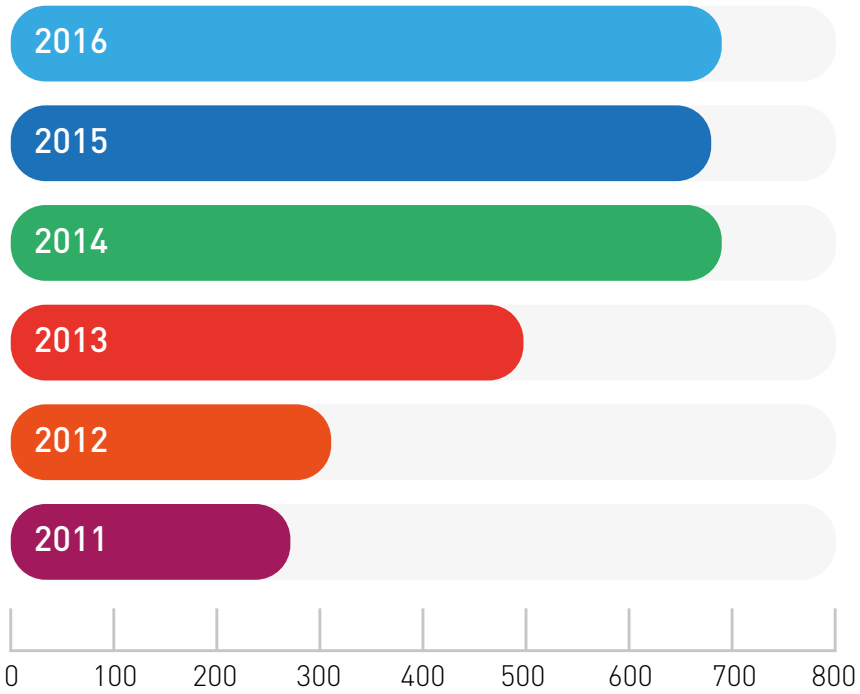
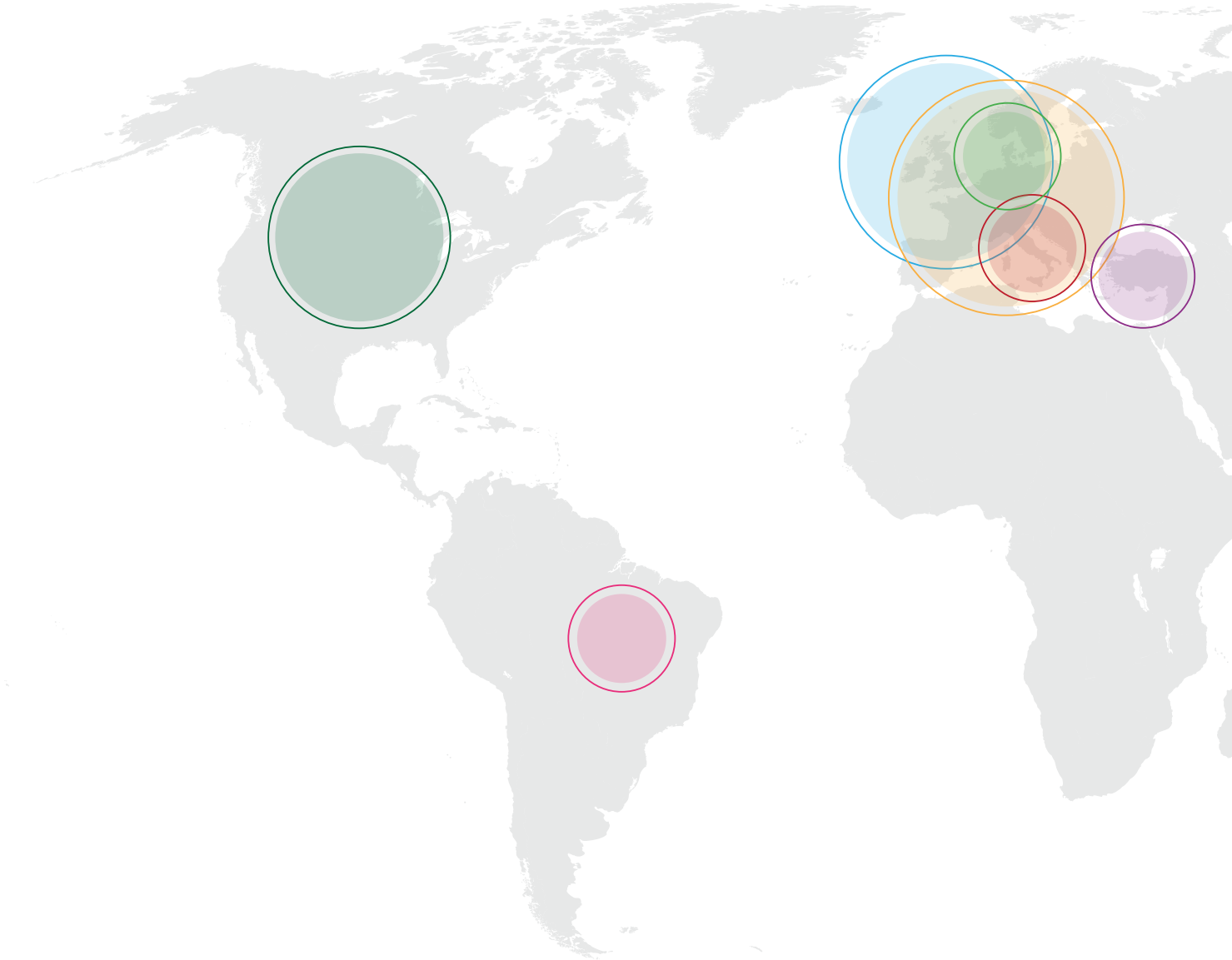
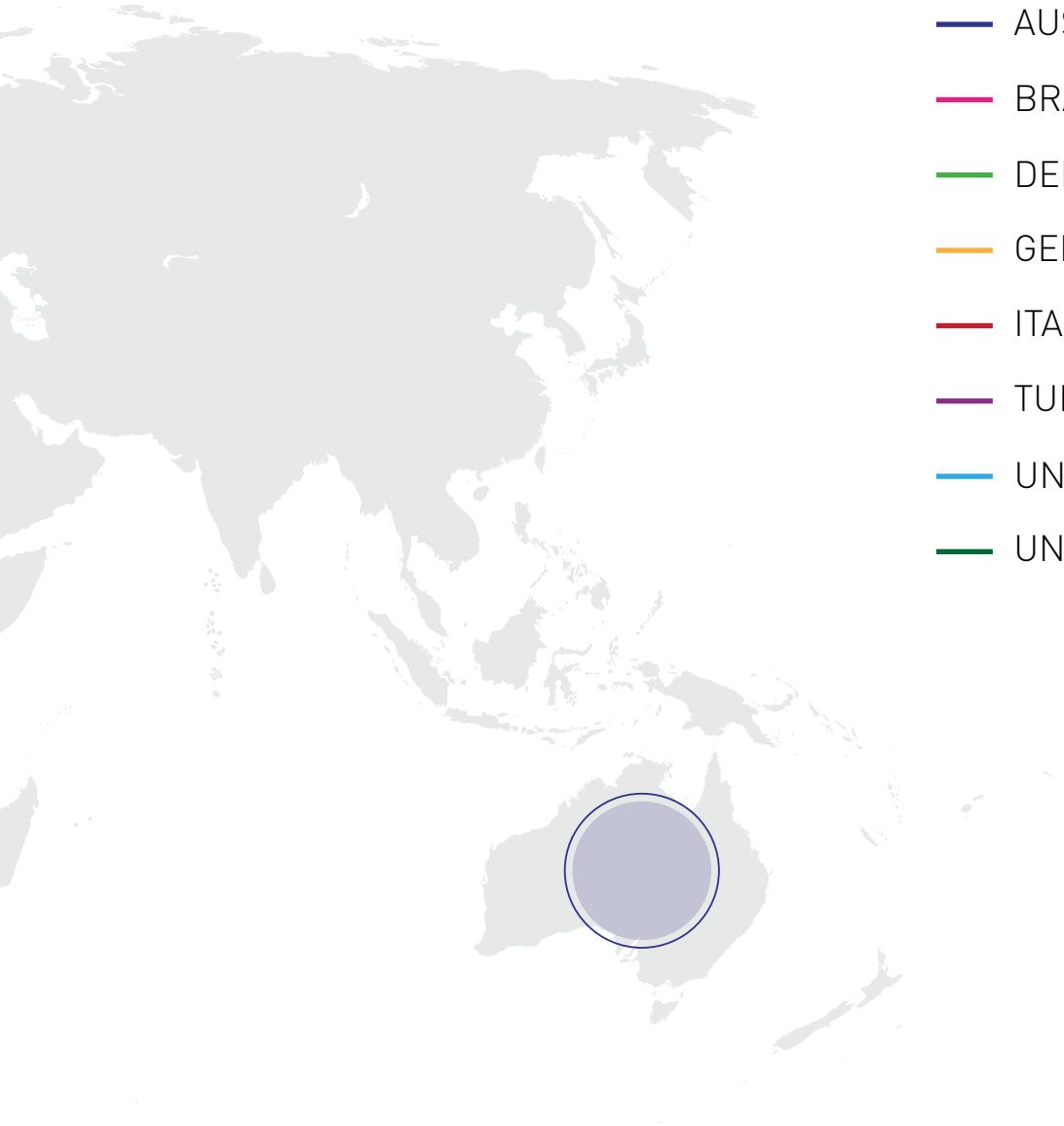


Fig. 6. The top 8 destinations of online citations referring to WHO ECEH





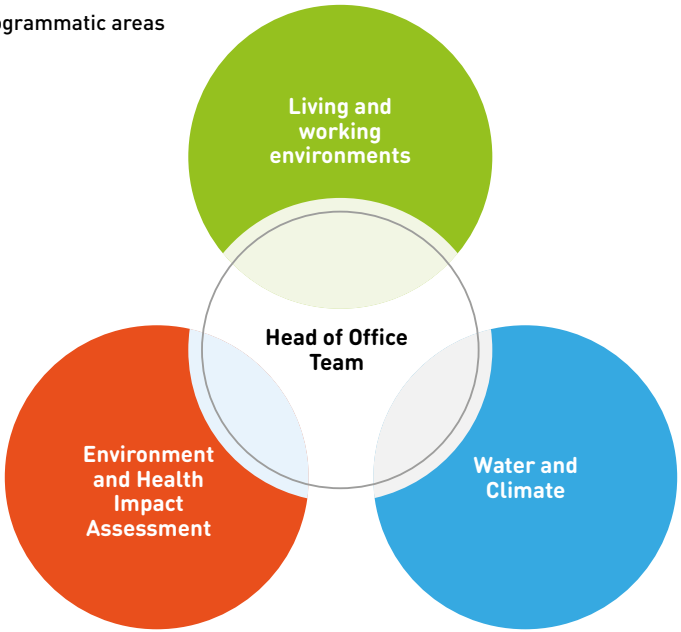
- AUSTRALIA
- BRAZIL
- DENMARK
- GERMANY
- ITALY
- TURKEY
- UNITED KINGDOM
- UNITED STATES

PROGRAMMATIC AREAS

WHO ECEH accomplishes its mission by understanding how environmental exposures affect health and well-being, assessing and reducing environmental risk factors for health, and generating evidence for sound policy development in key technical areas. These are achieved through three programmatic areas (Fig. 7). At the centre of these programmatic areas lies the Head of Office Team, whose function is to facilitate the Centre's work.

Profiles of each of the programme's technical areas are outlined in the following pages.

Fig. 7. Structure of WHO ECEH's programmatic areas



Living and working environments

- Air quality
- Chemical safety
- Environmental noise
- Environmentally sustainable health systems
- Workers' health

Water and climate

- Climate change and health
- Water, sanitation and hygiene

Environment and health impact assessment

- Economics of environment and health
- Environment and health impact assessment
- Urban and built environments
- Waste management and health
- Industrially contaminated sites
- Environmental health inequalities

Living and working environments

AIR QUALITY

Over the last few years, ambient and household air pollution has gained growing prominence on the global health agenda. It is now the biggest environmental risk to health, responsible every year for the premature deaths of 6.5 million people globally and 620 000 in the WHO European Region. Improving air quality can therefore deliver sustainable health benefits: reducing air pollution levels means reducing premature deaths and diseases due to stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma. Policies to reduce air pollutants and climate pollutants can produce several co-benefits for health, such as reduction of injuries due to traffic, promotion of physical activity and noise reduction.

Key facts[11]

- Air pollution is the single largest environmental health risk in Europe. Every year, ambient (outdoor) air pollution causes nearly 500 000 premature deaths; household (indoor) air pollution from solid-fuel combustion for heating and cooking is responsible for nearly 120 000 premature deaths.
- Nearly 290 000 deaths in high-income countries, and 190 000 deaths in middle- and low-income countries, were attributable to ambient air pollution in the WHO European Region in 2012.
- Worldwide, ischaemic heart disease and stroke are the most common causes of premature death attributable to ambient (outdoor) air pollution (72%); chronic obstructive pulmonary disease and lung cancer are next, based on data from 2012.
- The International Agency for Research on Cancer has classified air pollution in general, as well as particulate matter (PM) as a separate component of air pollution mixtures, as carcinogenic.
- In European cities that monitor air pollution (over 1790 cities in 42 countries), annual urban levels of PM_{10} generally exceed the WHO guidelines value.

Our role

- To be effective, the implementation of air quality policies requires coherence at global, European, national and local levels and across most economic sectors, as well as the engagement of stakeholders.

- Activities of WHO ECEH which aim to achieve this objective include developing methods to quantify health risks, supporting the implementation of international legal instruments, such as the Convention on Long-range Transboundary Air Pollution (CLRTAP),[12] and coordinating major international projects on air pollution and health. Fifty-one Member States of the United Nations Economic Commission for Europe are parties to CLRTAP, and over the years the parties have adopted eight pollutant-specific protocols. The Task Force on Health, chaired by WHO ECEH, has been instrumental in this process.

- Initiatives such as the Batumi Action for Cleaner Air,[13] adopted at the Eighth Environment for Europe Ministerial Conference (2016), create a framework for Member States to voluntarily commit to ambitious actions to combat air pollution, in the areas of monitoring, national action programmes, public awareness, capacity-building and policy-making.

- WHO ECEH also provides guidance and technical support to the regular update of the WHO Air Quality Guidelines (AQGs),[8] which are used as a reference tool to help decision-makers across the world in setting standards and goals for air quality management to protect population health.

Case study: Development and use of tools to quantify health impacts of air pollution[10]

In May 2016, WHO ECEH launched AirQ+: a new software, based on a previous version (AirQ) which had been available for 14 years, to measure the impacts of air pollution on health. AirQ+ allows calculations of long-term impacts related to classical air pollutants such as particulate matter, ozone, nitrogen dioxide, and also black carbon. AirQ+ was designed to: (1) provide a transparent tool in terms of methodologies and algorithms; (2) present a user-friendly interface; (3) guide the user in Health Impact Assessment (HIA) of the most important and best-recognized effects of air pollution; (4) provide default values for parameters including Concentration Response Functions – cut-off values, which can optionally be changed by the user; and (5) offer a contextual HELP function. In its first year, the software was downloaded by more than 1000 people and institutions, and it has been applied in several countries and cities. WHO ECEH has pilot-tested AirQ+ in Skopje and in Serbia; the results are due to be published at the beginning of 2018. Application of AirQ+ allows identification of key issues and strategies to improve both the monitoring of air quality and health risk management at the national and urban level.

CHEMICAL SAFETY

The range of chemicals affecting human health is wide and growing. The figures for chemical production and consumption in the WHO European Region are the highest in the world: 11 of the top 30 major chemical-producing countries are European, generating chemical sales of €533 billion.[14]

Globally, 1.3 million lives and 43 million disability-adjusted life years (DALYs) were lost in 2012 as a result of exposure to selected chemicals, the health effects of which are well estimated. The burden of disease attributable to chemicals has been estimated for only a few types of chemical exposure; lack of scientific evidence and data means that the burden is likely to be underestimated.

In Europe, mercury pollution exacts a toll of €5.1 billion a year, while a broader estimate of childhood medical and physiological conditions resulting from chemical hazards suggests that the costs are in the order of €71 billion a year. A recent analysis estimated the costs of the burden of disease attributable to endocrine-disrupting chemicals (EDCs) at €163 billion a year. Despite substantial progress in the regulation of chemicals, urgent action is needed to protect children at early stages of development, to improve health prospects throughout life.

Key facts

- Children are more vulnerable to the effects of exposure to chemicals and cannot protect their rights to live in a safe environment. Fifty-four per cent of the global burden of disease attributable to environmental exposures, expressed in DALYs, is borne by children under the age of 15.

- Children are exposed to chemicals every day and throughout their lives. Chemicals can enter food chains and consumer products, increasing the risk of exposure and impact on health. Chemicals can undergo complex interactions in the case of multiple exposures, as has been shown for EDCs.

- Worldwide, unintentional poisonings are estimated to cause 193 000 deaths annually, the majority of which are children.

- There is growing recognition of the profound and long-lasting effects of exposure to toxic environmental agents in early life, which can lead to diseases later in life and can even – as in the case of exposure to certain chemicals at critical life stages – have impacts that manifest themselves across generations.

- An increasing number of human studies have confirmed the effects of chemicals on the developing brain, respiratory health later in life, endocrine-related disorders, obesity, diabetes and other metabolic disorders.

Our role

- WHO ECEH provides technical support to assist Member States in building national capacity to prevent health risks due to inappropriate management of chemicals and to ensure health systems' preparedness and response to chemical-related emergencies.

- A WHO road map on the enhancement of health sector engagement in the Strategic Approach to International Chemicals Management (SAICM), towards the Health 2020 goals and beyond has been supported by all WHO Member States.

- The Minsk Declaration of the life-course approach in the context of Health 2020 encourages the Member States of the WHO European Region to pay specific attention to the protection of early childhood from hazardous chemicals.

- Implementation of the global legal instrument on mercury, the Minamata Convention, aims to alleviate economic losses caused by mercury-induced neurological deficits. Experience from previously conducted international projects will be used to develop a harmonized HBM methodology for assessing temporal trends in exposures and evaluating the effectiveness of the Minamata Convention.

- Internationally legally binding and voluntary agreements, such as the Stockholm Convention, Rotterdam Convention, Minamata Convention on Mercury, SAICM and Health 2020, highlight the crucial role of all involved stakeholders at the local, national, regional and global levels. WHO ECEH works specifically to broker these international agreements and to facilitate adoption and implementation at country level.

Case study: Inventory of hazardous chemicals in Georgia

In 2015, WHO ECEH joined with the National Centre for Disease Control and Public Health of Georgia and the Ministry of Environment and Natural Resources Protection of Georgia implemented a two-year project funded through the UBA Advisory Assistance Programme. Its purpose was to develop a legislative and operational framework for collection and sharing of information on hazardous chemicals in Georgia, as well as to devise a model register/ inventory of hazardous chemicals. The project aimed to strengthen inter-agency cooperation and to raise awareness of information collection and sharing and of its importance in the implementation of sound chemicals management. The project also provided multiple long-term benefits for implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) and development of a registration system comparable with the EU chemicals policy (REACH). Lessons learned from the project implementation and the achievements towards creating a national register in Georgia have been shared with other Member States, several of which expressed interest in combining efforts and building on the experience gathered by Georgia.


World Health
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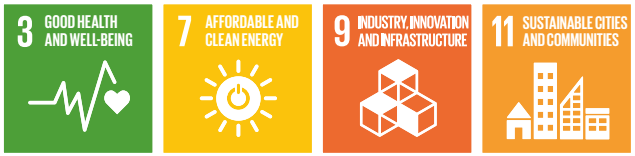
ENVIRONMENTAL NOISE



In Europe, environmental noise pollution ranks among the top environmental hazards to physical and mental health and well-being. Excessive noise seriously harms human health and interferes with people's daily activities at school, at work, at home and during leisure time. Scientific studies now show an even stronger association between noise exposure – particularly from road, rail and aircraft – and negative auditory and non-auditory health outcomes. As a result, approximately 1.6 million healthy years of life are estimated to be lost to illness, disability or early death each year in western Europe because of environmental noise exposure.

Key facts

- Environmental noise pollution ranks among the top environmental health hazards in Europe.
- Auditory health outcomes associated with excessive noise exposure include hearing impairment and tinnitus, while non-auditory effects can manifest as annoyance, poor sleep, cardiovascular events, cognitive impairment, metabolic effects, poor mental health and well-being, and adverse birth outcomes.
- For western Europe, the estimated healthy years of life lost to illness, disability or early death is: 903 000 from sleep disturbance; 654 000 from noise-induced annoyance; 45 000 from cognitive impairment in children aged 7–19; and 22 000 from noise-induced tinnitus.

Our role

- WHO ECEH reviews evidence on the main health effects of noise, identifies the needs of vulnerable groups in collaboration with international experts, and supports Member States of the WHO European Region in preventing and controlling exposure to excessive noise.
- WHO ECEH uses this evidence to offer technical and policy guidance for health protection at all levels, while Member States are encouraged to measure and report data to aid noise mapping.
- WHO ECEH coordinated the development of the WHO Environmental Noise Guidelines for the European Region. The guidelines include a review of evidence on the health effects of environmental noise, incorporating significant research carried out in recent years. The health outcomes for which the evidence has been systematically reviewed include: sleep disturbance, annoyance, cognitive impairment, mental health and well-being, cardiovascular diseases, hearing impairment and tinnitus, and adverse birth outcomes.

ENVIRONMENTALLY SUSTAINABLE HEALTH SYSTEMS

Health systems are fundamental to achieving and maintaining societal health and welfare, and are key factors for development and economic growth. They also represent a large share of the economy, globally and in most Member States of the WHO European Region, and employ large workforces, notably in health care. Taken as a whole, the health sector consumes considerable amounts of energy and resources and produces major streams of emissions and waste, either directly or through the goods and services it procures, uses and disposes of.

Key facts

- Health services in some developed countries are responsible for between 5% and 15% of carbon emissions.
- Health systems constitute a large economic sector, accounting for 8% of all jobs in the EU-27 and between 8% and 10% of GDP in the WHO European Region.[15]
- The existing evidence reveals a wide range of potential benefits from fostering environmental sustainability in health systems; these include benefits for finance, health, access and quality of care, the workforce, the environment and climate resilience.
- The existing evidence points to three key categories (among others) of environmental impacts from health systems: (1) health care waste, (2) wastewater, and (3) greenhouse gas emissions.
- Enablers of environmental sustainability in health systems include capacity-building, robust regulatory frameworks, incentive schemes, leadership from top management, and engagement of the workforce, patients and stakeholders.

Our role

The WHO Regional Office for Europe has a clear policy mandate in this area. Health 2020, the Tallinn Charter: Health Systems for Health and Wealth, the Parma Commitment to Act on Environment and Health, and the Ostrava Declaration provide a solid basis upon which to engage in technical work, advocacy and support for Member States in policy development, adoption and implementation.

WHO ECEH acts to provide leadership and collect evidence which can improve activities relating to environmentally sustainable health systems at the country level. As a core function of its work, ECEH provides both formal and informal mechanisms for sharing best practice and aims to stimulate discussion and research that can create more sustainable and resilient health systems. Specifically, ECEH developed and published a strategic outlook which aims to stimulate discussion and leadership relating to sustainable health systems.

Case study: Transitioning to environmentally sustainable health systems in the United Kingdom

The National Health Service (NHS) is the publicly-funded health care system of the United Kingdom. It employs more than 1.7 million people and caters for a population of 65.1 million. Within its decentralized structure, several providers and trusts had been engaging in a variety of small-scale, independent and locally coordinated sustainability initiatives. The NHS Sustainable Development Unit (SDU) was established in 2008 to work with and support the NHS in becoming more environmentally and socially sustainable, thus contributing to its overall financial sustainability. Thereafter, strategies were developed; governance structures and mechanisms for sustainability were put in place; stakeholder engagement mechanisms were implemented; and supporting mechanisms were devised. This initiative was evaluated in collaboration with WHO ECEH in order to generate transferability and encourage adoption both within the NHS and by other health services more broadly.

WORKERS' HEALTH

Globally, more than 2.3 million people die each year from occupational accidents or work-related diseases, and around 4% of annual GDP is lost as a result of occupational diseases and accidents.[16] Poor working conditions result in a total of 300 000 work-related deaths and economic losses amounting to 5% of the GDP of the WHO European Region every year. Less than 10% of the working population has access to occupational health services in many European countries.[17]

Key facts

- About 70% of workers do not have any insurance to compensate them in case of occupational diseases and injuries.
- The major occupational risks in the WHO European Region are injuries (32% of the occupational burden of disease), noise (21%), carcinogens (16%), airborne particulate matter (27%), and ergonomic hazards (4%).[18]
- Globally, 304 000 deaths are attributed each year to occupational carcinogens. Asbestos is one of the most important occupational carcinogens, causing at least half of the deaths from occupational cancer. World Health Assembly Resolution 58.22 (2005) on cancer prevention and control urged Member States to pay special attention to cancers for which avoidable exposure is a factor, particularly exposure to chemicals in the workplace and the environment.

Our role

WHO ECEH provides technical and policy support to countries in the European Region for an effective and efficient implementation of the WHO Global Plan of Action on Workers' Health 2008–2017,[19] in collaboration with governments, trade unions, employers, professional associations and other stakeholders. The Global Plan aims to strengthen the capacity of national health systems to assess and eliminate risk factors in the work environment; its general objectives include:

- devising national policy instruments on workers' health;
- protecting and promoting health in the workplace;
- improving the performance of, and access to, occupational health services;
- providing and communicating evidence for preventive action; and
- incorporating workers' health into other policies.

Case study: Protecting workers' health in the former Yugoslav Republic of Macedonia

The former Yugoslav Republic of Macedonia took part in a two-year (2009–2011) WHO project "Protecting health from climate change", a seven-country initiative (Albania, Kazakhstan, Kyrgyzstan, the Russian Federation, Tajikistan, the former Yugoslav Republic of Macedonia and Uzbekistan) funded by the International Climate Initiative of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety. The overall goal of the project was to strengthen capacity in understanding and responding to the health risks of climate change, as well as to develop the Heat–Health Action Plan. Within the project, a WHO study in the country showed that it is possible to compare the damage costs incurred through increase in disease cases and deaths that were not averted with the costs of adaptation; moreover, a partial reduction in health impacts is an expected benefit resulting from adaptation measures implemented. The project resulted in a set of "Recommendations for protection of workers' health during heatwaves",[20] and considered the economic implications of adaptation. The annualized costs of heat–health adaptation measures were estimated at 12 million local currency units (LCU), compared to health damage costs of 170 million LCU a year (Climate change and health: a tool to estimate health and adaptation costs. Copenhagen, WHO Regional Office for Europe, 2013).[21]

Water and climate

CLIMATE CHANGE AND HEALTH

Climate change affects the health of people in Europe through warming temperatures and changing weather patterns. It is set to become one of the most challenging threats populations will face in the coming decades and needs to be tackled urgently. A WHO assessment concluded that climate change is expected to cause over 250 000 additional deaths a year globally between 2030 and 2050.[22,23]

Climate has a serious adverse impact on health, so adaptation and mitigation measures are necessary to address both the current burden of disease and the additional burden that will be posed by climate change. In general, there is a need to strengthen mainstream public health and health services to create climate-resilient communities.

Key facts

- Heatwaves were the deadliest extreme weather event in the WHO European Region between 1991 and 2015, causing tens of thousands of premature deaths. The length, frequency and intensity of heatwaves are expected to increase in the future.
- Flooding killed more than 2000 people and affected approximately 9 million people between 1991 and 2011. Heavy rain is likely to become more frequent in many parts of the WHO European Region.
- Climate change is projected to lead to the spreading and increase of disease vectors including: the castor bean tick (*Ixodes ricinus*, also known as the deer tick or sheep tick), which transmits viral and bacterial pathogens; the Asian tiger mosquito (*Aedes albopictus*), which can transmit several diseases including dengue, chikungunya and Zika; and *Phlebotomus* species of sandflies, which transmit leishmaniasis.
- Climate change can increase food safety hazards through the food chain.
- Crop yields could decrease by 25–30% in central Asia and in southern parts of Europe by the middle of the 21st century.[24]

Our role

- WHO ECEH supports Member States in assessing vulnerabilities and impacts of climate change, enhancing disease surveillance for climate-sensitive vector-borne diseases, and improving preparedness, planning and response to extreme events.

Case study: Developing new methods in climate change adaptation

In 2008, WHO ECEH launched a pilot two-year (2009–2011) WHO project "Protecting health from climate change", a seven-country initiative involving Albania, Kazakhstan, Kyrgyzstan, the Russian Federation, Tajikistan, the former Yugoslav Republic of Macedonia and Uzbekistan, and funded by the International Climate Initiative of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety. The overall aim of the project was to protect health from climate change, by focusing on adaptation methods, strengthening health systems, and building institutional capacity in assessing vulnerability, impacts and adaptive capacity in each country. This, in turn, would form the basis for developing a national health adaptation strategy or action plan; carrying out awareness-raising activities; and facilitating sharing of knowledge and experience. By illustrating how climate change adaptation and mitigation measures can be applied to the health sector, this initiative served as a true pilot for further development and investment in the field. Such proof of concept of transferability indicates that the lessons learnt can be used to stimulate the health adaptation process in other countries. The impact demonstrated by this European pilot initiative has led to an adoption of the methods developed within its scope by institutions and governments around the world.

WATER, SANITATION AND HYGIENE

Water-related diseases caused by unsafe drinking-water, poorly managed sanitation and inadequate hygiene represent a considerable health burden in the WHO European Region. It remains a regional priority to scale up efforts to achieve universal and equitable access to safely managed water and sanitation services for all which are protective of public health and the environment and responsive to climate change effects. The Protocol on Water and Health is the primary policy instrument in the WHO European region to fulfil regional and global commitments at the national level, such as the Sustainable Development Goals and targets pertaining to water, sanitation and health and the Ostrava Declaration on Environment and Health.

Key facts

- Water-related diseases prevail and bears significant economic costs: every day in the WHO European Region 14 people die of diarrheal disease due to inadequate water, sanitation and hygiene (WASH). Campylobacteriosis, giardiasis, hepatitis A and shigellosis are the most commonly reported infectious diseases that could be attributed to water. However, the true extent of water-related diseases in the European Region is unknown. Available data are likely to represent only a small fraction of the complete picture.

- Drinking-water at home remains a luxury: although more than 51 million people in the region gained access to a basic drinking-water service between 2000 and 2015, almost 21 million people still do not enjoy such access, and about 57 million people lack piped water.

- Need to tackle sanitation challenges: 36 million people do not enjoy access to basic sanitation and 328 thousand people still practise open defecation.

- Untreated wastewater flows endure: In high-income and upper-middle income countries of the Region, about 30% and 60% of urban wastewater, respectively, is released to the environment without treatment.

- Significant inequalities persist: about three quarters of people without basic drinking water services live in rural areas. In the Caucus and Central Asia, approximately 20% of rural dwellers live in homes without access to basic drinking water, as opposed to 3% of urban residents.

- WASH infrastructure is not receiving enough investment: globally, more than half of all countries say that household tariffs are insufficient to recover

operation and maintenance costs, leading to an increase in disrepair and service failure. Healthy learning spaces for children are not a given: providing clean school toilets, safe drinking-water, soap for hand-washing, and adequate provisions for menstrual hygiene management are common challenges across the entire European Region, hampering good learning, health and well-being.

Our role

WHO ECEH provides leadership in tackling the prevailing challenges on water, sanitation and health in the WHO European Region and supports Member States in strengthening their capacities in developing and implementing policies, strategies and tools on water, sanitation and health. Specifically, WHO ECEH:

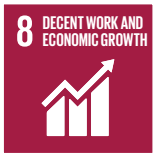
- provides, together with UNECE, core secretariat functions to the Protocol on Water and Health and supports its implementation;
- establishes the evidence-base for informed policy making and supports the development of WHO Guidelines on water quality, including promotion of their uptake in policy and practice in the regional context;
- develops technical guidance and tools and provides capacity building on risk-based water quality management and surveillance approaches, implementation of water safety plans and sanitation safety plans, strengthening water-related disease surveillance capacities and improving water, sanitation and hygiene in schools and health care facilities; and
- facilitates regional roll out of global monitoring programmes such as the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP) and the Global Analysis and Assessment of sanitation and Drinking Water (GLAAS) as the official UN mechanisms to measure progress towards achieving SDG targets 6.1-6.3 on water, sanitation and hygiene.
- provides technical advice to countries in their preparedness planning and response to emergencies in relation to water, sanitation and hygiene.

Case study: Improving drinking-water supply in rural areas of Serbia

The Protocol on Water and Health represents an effective policy instrument to support countries in pursuing their national water, sanitation and health agendas. The Republic of Serbia ratified the Protocol in 2013, and in 2015 set national targets which aim at achieving or maintaining a high level of protection against water related disease. A baseline analysis of the prevailing water, sanitation and health situation in the country revealed significant knowledge gaps in rural water supply. To improve the evidence base and enable informed decision-making, Serbia's national targets set under the Protocol include a specific target on undertaking a systematic assessment of the prevailing conditions in rural water supplies which serve 40% of the population. Subsequently, a national-level systematic survey was undertaken in 2016 and the findings clearly showed a significant urban-rural gap in water-quality. About one third of all small supplies showed faecal contamination; 71% of piped systems and 77% of individual supplies in rural areas were found to require improvement action. Since its publication, the survey has induced policy actions and measures for the improvement of rural water supplies in Serbia, in particular proposing a new provision for implementation of the water safety plan approach in the draft law on water intended for human consumption and improving enforcement of regulation on the foundation and ownership of water supply systems. Progressing from targets to policy action, Serbia has proved that the Protocol on Water and Health's target setting framework is an efficient instrument in achieving positive results in the improvement of water and health and thereby achieving drinking-water related Sustainable Development Goals and targets.

Environment and health impact assessment

ECONOMICS OF ENVIRONMENT AND HEALTH



Evidence on the burden of disease caused by environmental health determinants provides a strong basis for designing policies in many sectors that promote health and reduce exposure to harmful substances. Data on the economic costs and benefits of such policies (including the costs of inaction) provide additional compelling arguments for investing in disease prevention and are thus of high political importance for policy- and decision-makers.

Key facts

- Economic assessments are not always robust: when the underlying scientific evidence is uncertain, assumptions and limitations regarding data, methods and interpretation often result in substantial uncertainty about policy implications.
- Conversely, when available evidence is reliable, economic assessments can be very informative and policy relevant, as in the case of air pollution, which was estimated by the WHO ECEH to cost USD 1.6 trillion in 2012 in 48 European Member States.[25]

Our role

WHO ECEH brings together experts to identify the most cost–effective policies, to strengthen the case for such policies, to compile data on their economic costs and benefits, and to provide additional compelling arguments for investing in disease prevention. In areas such as climate change, outdoor pollution and transport, WHO ECEH and other organizations are increasingly utilizing economic methods such as cost–benefit studies and cost–effectiveness analyses to inform policy-making in relation to the environment and health.

- Since 2012 WHO ECEH has addressed environmental health and economics by developing a strategic framework for environmental health economics and establishing the Environmental Health Economics Network (EHEN) to support implementation of the framework.

Case study: Cross-boundary economic evaluation of asbestos bans

WHO and the International Labour Organization (ILO) recommend that the most effective way to eliminate asbestos-related diseases is to ban the use of all forms of asbestos. Even though many countries have already introduced total bans on both the production and the consumption of asbestos, countries that still use it argue that a ban would harm their economic growth and development. However, the literature on the economic benefits and costs of asbestos bans is sparse. In 2017, WHO ECEH, in collaboration with key partners, produced and released an economic evaluation which examines the global historical trends in asbestos production, consumption and bans, and assesses the economic impact of declines in production and consumption. The publication also identifies and quantifies potential economic costs associated with continued production and consumption.

The evaluation found that country-level data reveal no observable negative effects on gross domestic product (GDP) following an asbestos ban or a decline in consumption or production. It also found that costs associated with the health impacts of asbestos use and production increasingly outweigh the benefits of continued use. This work now functions as a core evidence base for health and economic policy, as well as legal policy, relating to the use of asbestos in countries around the world. The National Institute of Occupational Health (IOH) – the WHO Collaborating Centre in Skopje, appointed by the Ministry of Health of the former Yugoslav Republic of Macedonia and working in collaboration with the WHO Regional Office for Europe – is actively involved in increasing public awareness about asbestos as an effective way of reducing the risks posed to local communities. Following this and based on the former Yugoslav Republic of Macedonia's ban on asbestos use, the IOH, with government support, developed a National Programme for the Elimination of Asbestos-Related Diseases.

ENVIRONMENT AND HEALTH IMPACT ASSESSMENT

Health is heavily influenced by decisions on policies, plans, programmes and projects taken outside the health sector. Agriculture, energy, housing, industrial development, transport, and water and sanitation are among the sectors with high impacts on human health and with high potential for primary prevention actions.

In many WHO European Member States, especially within the European Union, it is now well-established practice to carry out environmental assessments, such as environmental impact assessments (EIA) and strategic environmental assessments (SEA), to evaluate, avoid or mitigate the impacts of policies, plans, programmes and projects on the environment. However, there is still a need to integrate the broader aspects of health and well-being into environmental assessments.

Key facts

- There is a need to promote further use of health impact assessment (HIA) as a tool to develop sustainable, "no regrets" policies, by considering health implications from the beginning of the planning process in all sectors, and through integrating the concerned population process.

- Integrating HIA into environmental assessment can serve as an equity lens focusing on the impacts of a proposal and hence supports achievement of the SDGs.

- HIA needs to be further integrated into environmental assessment by including public health experts at an earlier stage in the environmental assessment process. To achieve this, the capacities of health professionals to conduct or review HIA and health assessments within environmental assessment need to be strengthened.

- Guidelines adapted to national environmental, social and regulatory contexts are needed to help environmental and health assessors, as well as decision-makers, to conduct and review the quality of impact assessments.

Our role

- WHO ECEH works to fill this gap by developing HIA methodologies and tools for use by national or local authorities and institutions. Such methodologies and tools are usually piloted through projects that promote the integration of health in environmental assessments; this is achieved through building capacity at local, national and subregional levels and supporting Member States in the implementation of specific projects.

- WHO ECEH works together with the UNECE Secretariat of the Espoo Convention on Environmental Assessment in a Transboundary Context and its Protocol on Strategic Environmental Assessment to further support Member States of WHO and UNECE in integrating health in these assessments; this is achieved through the development of a specific health section in the SEA Manual and participation in the Meeting of the Parties, as well as in capacity building activities.

- WHO ECEH supports HIA implementation through local- and national-level training of a broad range of stakeholders and policy-makers, environmental health officers, planning officers and public health practitioners.

Case study: Assessing health impacts in Romania

Integrated environmental health impact assessment is a multidisciplinary approach and instrument that draws on disciplines such as public health, health promotion, the social and political sciences, environmental science, urban planning, epidemiology and statistics. In July 2016, WHO ECEH, in collaboration with key partners, delivered a workshop to ministers of health and education, as well as high-level government officials, from Romania and the Republic of Moldova. The technical workshop – attended by 40 participants, including top scientists in the environment and health field from the Netherlands, Switzerland and the United Kingdom – covered topics such as methods, strategies and tools for carrying out comprehensive, real-life assessments of the health impacts of environmental risk factors (e.g. airborne particulates) and complex determinants (e.g. power generation). The president of Romania, Klaus Werner Iohannis, was in attendance and demonstrated his commitment to WHO ECEH's approach: "If one wants a healthy population, a safer public health sector and prosperous society, the answer stands in health in all policies. This indicates a need for an integrated and multidisciplinary approach that includes not only the health of an individual and population, but also the health of the ecosystem."

URBAN AND BUILT ENVIRONMENTS

More than 80% of the European population is expected to live in urban areas by 2030. While urban living continues to offer many opportunities, including potential access to better health care, jobs and education, today's urban environments can concentrate health risks and introduce new hazards. Urban planning decisions made by local and subnational actors therefore play a pivotal role both in promoting and protecting the health and well-being of urban dwellers, and in assuring that all population groups benefit equally from urban services.

Key facts

- Modelling studies for urban temperatures over the next 70 years project that, in urban areas where the green cover is reduced by 10%, temperatures could increase by 8.2 ºC above current levels.
- Every year, more than 100 000 deaths occur in the WHO European Region as a result of inadequate housing conditions, many of which could be prevented.
- Cities exhibit high levels of social and environmental inequality. Less wealthy households may suffer from inadequate homes and indoor cold two or three times more frequently, and have significantly lower access to adequate water supply and sanitation.
- In 2012 a survey of 200 cities in Europe showed that 35% had neither a climate change mitigation plan nor an adaptation plan; 37% had only a mitigation plan, while 28% had both a mitigation plan and an adaptation plan.

Our role

- Priority work in this area aims to support actions in the urban environment, from healthy urban planning and health impact assessment of local urban policies and plans, to providing a science policy interface in addressing (for example) thermal comfort and energy issues or in preventing health inequalities related to housing and urban conditions. This is not a matter of the health sector only: it includes health considerations in economic regeneration and urban development efforts. Integrating transport and urban development policies can deliver more compact cities, and facilitate modal shifts towards more cycling, walking and public transport.

- Demand management interventions encourage reductions in emissions of air pollutants, greenhouse gases and noise; such interventions include car and bicycle sharing, and incentives for public transport use –parking policies, and behavioural changes such as eco-driving (resulting in lower fuel consumption).

- Developing national policies for active mobility can help place cycling and walking more prominently on the national political agenda. Within the Transport, Health and Environment Pan-European Programme (THE PEP), Member States are working in partnership towards the development of a Pan-European Master Plan for Cycling Promotion, which is expected to be adopted at the Fifth High-level Meeting on Transport, Health and Environment, to be held in Austria in 2019.

- To support this work, the WHO European Healthy Cities Network brings together cities from around the WHO European Region that are committed to health and sustainable development: nearly 100 cities and towns from 30 countries.

WASTE MANAGEMENT AND HEALTH

Improper waste management and illegal waste shipments and disposal can cause soil, water and air pollution, and have negative impacts on both environment and public health. Besides industrial waste currently produced and historically collected at contaminated sites, a significant proportion of waste is communal waste. Management of waste is a challenging undertaking in all European countries, with important implications for human health and well-being, environmental preservation, sustainability and economy. A clear strategic direction and strong EU legislation have resulted in marked progress in several countries and substantial increases in the proportion of municipal waste recycled.[26] However, in many cases, informal, uncontrolled or poorly managed practices and old technologies have been known to produce adverse human health impacts.

Key facts

- In 2013, per capita waste production in the EU ranged from 272 kg/year in Romania to 747 kg/year in Denmark. Following introduction of appropriate waste management systems and the principle of waste division at source, overall waste production in the EU decreased by 7% between 2004 and 2013.[27]
- Various studies estimate that approximately 2–6% of the population are affected by waste-related exposures.
- There is some evidence that higher-than-normal risk of cancer, respiratory disease and adverse reproductive outcomes has been found in people living near landfills and old-generation incinerators; while the evidence is not conclusive, negative health outcomes from these exposures can be minimised.
- Air emissions of carbon dioxide and air pollutants have measurable health impacts, costing between €4–63 per ton of disposed waste, depending on the technology used.
- About one quarter of approximately 350 000 known contaminated sites in EEA countries are due to waste or hazardous waste.
- A lack of consistent data from non-EU countries makes it difficult to develop a-European assessment and to direct the necessary efforts, expertise and resources towards countries that could make improvements.

Our role

WHO ECEH provides advice to Member States on effective and efficient measures to protect health and reduce waste-related noxious exposures; upon request, it also provides support through capacity-building activities.

- Thanks to substantial investments over recent years, in several countries – for example, Austria, Germany and the Netherlands – waste collection, processing and final disposal have developed into an organized and well-monitored system, giving rise to a profitable industry. Given the low emissions from modern facilities, impacts on human health are minimized. Separate collection, reuse, recycling and phasing-out of landfilling also improve sustainability.

- Progress has also been made in tackling informal practices in some countries. Different initiatives have been undertaken to improve the status of informal waste collectors in Member States of the south-eastern part of the WHO European Region, such as the SWIFT project in Serbia, through collaboration between international governmental organizations, national governments, the civil sector and recycling businesses. Examples of collaboration include: formalization of work through the establishment of cooperatives, trade unions and employment in public utility companies; distribution of equipment, protective clothing and training for occupational safety and business development; and support on social issues, such as health care, education and child labour.

Case study: Improving health through waste management in Italy

In the middle to late 1990s, the Italian national government declared an environmental emergency in the Campania region due to waste management. Subsequently, in 1998, 77 municipalities in this region were included within the territory of the national priority contaminated site, "Litorale Domizio Flegreo e Agro Aversano". Collaborative research, undertaken by the Italian municipality and WHO ECEH, found significantly rising trends for all causes of deaths; all cancers; liver, lung and stomach cancer mortality; and for the prevalence of congenital malformations of the nervous system and urogenital tract at birth.[28] Even if a causal interpretation of the reported associations was not fully demonstrated, it was deemed necessary and urgent to foster a reduction of exposure to hazardous waste. Italy is now one of the few countries that has a permanent system for epidemiological surveillance of the health of people living near large industrial facilities and contaminated sites. Mortality and morbidity from relevant causes, selected a priori on the basis of available scientific evidence, are periodically analysed and publicly reported.

INDUSTRIALLY CONTAMINATED SITES

In Europe, earlier industrialization and poor environmental management practices have left a legacy of thousands of contaminated sites. Past and current industrial activities can cause local and diffuse contamination, to such an extent that it might threaten human health of resident populations, especially in vulnerable subgroup. The hazards are very heterogeneous, reliable exposure and health data are sparse, most associations between industrially contaminated sites and health refer to conditions with multifactorial aetiology. In addition health, environment, economic, occupational and social aspects related to contaminated sites are strongly interconnected. For example, disadvantaged people often live near polluted industrial sites with limited access to good quality green space. Environmental and social inequalities are of particular concern when relate to vulnerable subgroups.

Key facts

- According to the EEA, around 300 000 contaminated sites in Europe require clean-up. The majority of these sites host or have hosted industrial production, commercial services, oil production, waste treatment and disposal activities. The number of such sites is increasing.

- Contamination can affect soil, air, food and drinking water, and people can be exposed directly through ingestion, inhalation, skin contact, and dermal absorption to a host of noxious chemical agents; in addition, other risk factors such as noise, increased road traffic, odour, deteriorated landscape, lack of green space, property devaluation and amenity loss can play a role.

- Systematic assessments of the health impact of contaminated sites are not available, and the overall evidence is patchy. However, numerous local studies have found increased risks for a variety of adverse health outcomes, including mortality, cancer, respiratory disease, congenital anomalies and several others. Less severe outcomes outcomes such as annoyance, sleep disturbance, stress are far less known, but given their higher frequency they are likely to contribute substantially to the burden of disease of industrially contaminated sites.

Our role

WHO ECEH has been long collaborating with the scientific community, in order to develop the evidence base on contaminated sites and health. The ultimate goal is to support Member States in their effort to assess the extent of the problem in their countries, develop both policies to remediate existing sites as well as policies to prevent contamination.

- WHO ECEH has periodically gathered experts from academia and regulatory agencies to review the available scientific evidence, and the methodology for exposure assessment, risk assessment and health impact assessment of industrially contaminated sites.

- In order to promote a closer collaboration with national health and environmental authorities, WHO ECEH is an active partner of a COST Action currently involving 33 Member States (http://www.icshnet.eu/). The Action is coordinated by a WHO Collaborating Centre in Italy. Among its activities, capacity building, including targeted at young people, is included.

Case study: Oil shale in Estonia

WHO ECEH has been supporting an assessment of the health impacts of oil shale activities in the Ida-Viru County in north-east Estonia. Industrial practices, especially in the past, resulted in groundwater contamination and emission of air pollutants. A comprehensive project has been undertaken by the national Health Board and involving a large team of researchers and policy making agencies. Statistics show that life expectancy in the area is nearly five years shorter than in Tallinn or Tartu, although it is difficult to attribute this difference to specific causes, as the region is subject to multiple environmental as well as socially related risk factors. Detailed epidemiological studies, involving risk perception surveys, human biomonitoring essays and small area geographical analyses provided further detail and resulted in suggested remediation and health monitoring follow-up activities, especially aimed at vulnerable subgroups like children. Occupational risks were also found to be very important, with high lung cancer rates related to radon exposure in mining workers. More attention to the state of the environment and the health of residents in the region is needed. Results of the study have been taken into account in the preparation of the Estonian Oil Shale Strategy for 2016-2030.

ENVIRONMENTAL HEALTH INEQUALITIES

Inequalities in health are increasing in Europe. They exist between population groups within the same country and between countries across the WHO European Region. Environmental risks are not evenly distributed between and within countries and populations, nor does everyone have the same means to cope with these risks. A compelling body of evidence documents how environmental health issues such as pollution, poor sanitation, and unsafe homes and workplaces have disproportionately negative consequences for disadvantaged groups in the European Region and elsewhere.[29]

Key facts

- Environmental health inequalities have implications for a wide range of health issues, such as those associated with pollution, working conditions, road traffic safety, noise exposure, second-hand smoke exposure, inadequate sanitation, and household exposure to mould and other harmful substances.
- Environmental health inequalities can be linked to many different health outcomes, ranging from cardiovascular, infectious and respiratory diseases to injuries and mental health problems.

Our role

Current WHO activities supporting the implementation of the Parma and Ostrava Declarations and the Health 2020 policy framework are embedded within each of the environment and health topics and include technical assistance to countries, e.g. to assist the development of national environmental health inequality assessments. WHO ECEH works to:

- assess the magnitude of environmental health inequalities within Member States;
- identify the population groups that are most affected and most vulnerable;
- provide advice on suitable interventions to reduce existing inequalities and prevent future inequalities; and
- advance the state of science regarding the measurement of environmental health inequalities and the evaluation of interventions.

Case study: Assessing environmental inequalities in Kosovo[a]

In 2015, WHO ECEH released a report which gave a first assessment of the scale of environmental inequalities in two municipalities in Kosovo, Obiliq/Obilić and Fushë Kosovë/Kosovo Polje, and the role of socioeconomic, demographic, spatial and ethnic determinants in creating these inequalities. The analysis is based on a field survey and focuses on environmental vulnerabilities in relation to housing, water/hygiene/sanitation, environmental conditions and affordability constraints.

The findings show that there are marked inequalities in environmental disadvantage. The greatest inequalities are associated with socioeconomic and ethnic determinants, but spatial and demographic determinants also play a role. Most frequently, Roma, Ashkali and Egyptian (RAE) ethnicity, as well as low income and poor education, is identified as the strongest determinant of increased environmental disadvantage. Yet a range of environmental disadvantages is also identified that affect large population groups.

The report helps to identify potential target groups for social and environmental action and presents a range of examples of the variability of environmental inequalities and vulnerabilities. It shows how environmental equality and vulnerability can be assessed in methodological terms, and emphasizes the need for detailed analysis of inequalities and the most vulnerable population groups before action targeted at specific groups is determined.

a In accordance with Security Council resolution 1244 (1999).


World
Organ
Europe

Acronyms

AQG	Air quality guideline
DAAD	German Academic Exchange Service
DALYs	Disability-adjusted life years
ECDC	European Centre for Disease Prevention and Control
EDS	Endocrine-disrupting substances
EEA	European Environment Agency
GDP	Gross domestic product
HBM	Human Biomonitoring
HIA	Health impact assessment
ILO	International Labour Organization
IOH	Institute of Occupational Health
LCU	Local currency unit
MDG	Millennium Development Goal
NHS	National Health Service
RAE	Roma, Ashkali and Egyptian (ethnicity)
SAICM	Strategic Approach to International Chemicals Management
SDGs	Sustainable Development Goals
THE PEP	Transport, Health and Environment Pan-European Programme
UNECE	United Nations Economic Commission for Europe
WASH	Water, sanitation and hygiene
WSP	Water safety plan

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The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

Albania
Andorra
Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Croatia
Cyprus
Czechia
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Kazakhstan
Kyrgyzstan
Latvia
Lithuania
Luxembourg
Malta
Monaco
Montenegro
Netherlands
Norway
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