

Compendium of WHO and other UN guidance on health and environment

2024 update



Chapter 1. Background



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1. Background

As much as 24% of deaths are estimated to be attributable to environmental risks to health that are largely preventable (1). Acting on these environmental risks can be key to reducing many communicable and noncommunicable diseases and injuries. As much as 31% of deaths from ischaemic heart disease, 25% of strokes, 20% of lung cancers, 43% of acute respiratory infections and 33% of cases of chronic obstructive pulmonary disease (COPD) could be prevented by reducing air pollution. In addition, 69% of diarrhoeal diseases could be prevented through providing safer water, sanitation and hygiene (WASH); 40% of road traffic injuries could be reduced by changing the built environment and land use, and increasing occupational safety and traffic regulations; and 73% of unintentional poisonings could be prevented by improving the management of chemicals and restrictions regarding their use (1–3). Thus, taking preventive action by creating healthier environments should be an important component of most disease control strategies.

Essential to ensuring good health are clean indoor and outdoor air, a stable climate, adequate WASH facilities, the safe use of chemicals, protection from radiation, sound waste management, healthy and safe workplaces, health-supportive cities and built environments, sustainable and healthy diets, and the preservation of biodiversity and ecosystems. The coronavirus disease 2019 (COVID-19) pandemic was a reminder of the intrinsic linkages between human health and nature.

This Compendium presents key guidance to those wishing to minimize preventable deaths and disability, and improve health now and in the future. It summarizes and aims to facilitate access to guidance from the World Health Organization (WHO) and other United Nations (UN) agencies, and funds and programmes targeting the creation of healthier environments for healthier populations.



In this Compendium, **environment** refers to the following factors (4):

- air, water and soil pollution caused by chemical and biological agents, including environmental pollution from second-hand tobacco smoke;
- ultraviolet (UV) and ionizing radiation;
- electromagnetic fields (EMF);
- occupational risks;
- the built environment, including housing, workplaces, the provision of water for washing hands, and land use patterns and roads;
- climate and ecosystem changes;
- behaviour related to environmental factors, for example, hand-washing hygiene, physical activity fostered through improved urban design, and sustainable healthy diets.

The human right to a clean, healthy and sustainable environment

On 28 July 2022, the UN General Assembly adopted a historic resolution recognizing that everyone has the human right to a clean, healthy and sustainable environment (5). While recognized for the first time by the UN, more than 160 States had already enshrined this right in law through their constitutions, legislation or regional treaties (6).

Decades of experience confirm that the right to a clean, healthy and sustainable environment includes clean air; safe and sufficient water; healthy and sustainably produced food; non-toxic environments where people can safely live, work, learn and play; healthy ecosystems and biodiversity; and a safe climate (7–12). These substantive elements of the right to a healthy environment are supported by procedural rights of access to information, public participation in decision-making, access to justice with effective remedies, freedom of expression and freedom of association (13).

The implementation of the right to a healthy environment is guided by key principles, including non-discrimination, prevention, precaution and non-retrogression. Evidence proves that legal recognition of the right to a healthy environment is a catalyst for stronger environmental laws, improved enforcement of the relevant laws, enhanced accountability and, most importantly, improved environmental performance, such as improved air and water quality (14, 15).

Costa Rica, France and Slovenia are examples of states where constitutional recognition of the right to a healthy environment has spurred remarkable progress in addressing the climate crisis, loss of biodiversity and the effects of toxic pollution. Costa Rica generates 99% of its electricity from renewables and has doubled its forest cover since 1990, from 25% to more than 50%. France has banned the use of neonicotinoid pesticides and prohibits the export of pesticides that are not approved for use in the European Union. Slovenia has protected 40% of its land in national parks and ecological reserves, and is a world leader in recycling. Hundreds of good practices enacted as part of the implementation of the right to a clean, healthy and sustainable environment have been compiled by the UN Special Rapporteur on human rights and the environment (6).

1.1 Target audience

This Compendium aims to provide practitioners, policy makers and other professionals with a rapid overview of WHO- and other UN-recommended actions and tools to address various health risks. The particular practitioners targeted include key decision-makers at national, regional and municipal levels; other government officials; higher-level policy-makers; key actors, such as municipal staff, staff in relevant ministries (including those working with industry) and community health workers; country representatives and staff from WHO and UN partner agencies, funds and programmes; and nongovernmental organizations planning or performing work in countries.

1.2 Methods used for the development of the compendium

This Compendium was developed by systematically compiling published guidance from WHO and other UN organizations about health and the environment. Relevant WHO technical units were methodically consulted about its structure, content and resources. The units' input and subsequent reviews of sections and chapters were incorporated. Other UN organizations addressing health and the environment were also consulted.

Evidence and recommendations were included when they referred to protecting and promoting health by modifying the environment, safeguarding natural environments and the climate, reducing pollution, introducing personal protective measures and promoting healthy behaviours linked to environmental exposures. As put forward in the *WHO global strategy on health, environment and climate change* (16), the approaches included cover (i) implementing primary prevention that acts on determinants of health, (ii) taking cross-sectoral action to ensure that Health in All Policies effectively reach all environmental determinants of health, (iii) strengthening the health sector to build mechanisms for governance and political and social support, and (iv) developing effective communication about risks and solutions to guide choices and investments.

Collated guidance is grouped under the categories “policies and actions” and “awareness-raising and capacity-building”, if not under otherwise relevant categories. UN and World Bank guidance about interventions – such as disease control priorities for injury prevention and environmental health (17); *Healthy environments for healthy children: key messages for action*, from WHO and the United Nations Environment Programme (UNEP)

(18); and *Programme guidance for early life prevention of non-communicable diseases*, from the United Nations Children's Fund (UNICEF) (19) – was used to develop classifiers that serve as search tools, as well as to provide useful information for implementers and planners about the type of strategy or intervention. Classifiers include (i) the sectors principally involved in planning or implementation; (ii) the level of implementation; (iii) the type of instrument; and (iv) the category of evidence (see Section 1.3 How to use this Compendium).

A companion to the Compendium was published (20) that categorizes interventions according to the International Classification of Health Interventions (ICHI), which is a tool for reporting and analysing interventions for clinical and statistical purposes (21). The codes used to categorize interventions in the Compendium came from the ICHI system; the International Statistical Classification of Diseases and Related Health Problems, eleventh revision (known as the ICD-11) (22); and the International Standard Industrial Classification of All Economic Activities (ISIC) (23), where relevant, and these provide additional specificity when defining interventions.

The lists of guidance and classifiers are not comprehensive, and they are regularly updated as additional information becomes available.

1.3 How to use this compendium

There are many opportunities for interventions to be leveraged to create healthier environments. This Compendium provides an overview of guidance by environmental health topic and points to more detailed WHO and other UN guidance for further information. It also outlines actions that can be taken to create healthier environments and to guide and support the user in engaging in strategic discussions with other sectors and partners to effect these changes, when necessary.

The main part of each section compiles the guidance, and it also provides information about assessing the current situation in a country or area (e.g. using local data, conducting exposure modelling, using databases) and pollution sources, targets to achieve (e.g. guideline values) and selected tools and further resources, where relevant.

Not all of the guidance in this Compendium will apply to and work equally well in every context because there may be (i) differing exposures to the risk, (ii) differing underlying distribution of socioeconomic status and other health risks that influence the effectiveness of the guidance or (iii) differences in the resources available for implementation. Therefore, local circumstances and priorities should be considered before implementing any intervention, strategy or action.

Guidance in this Compendium can be searched using the following classifiers.

- **Sector principally involved in planning/implementation:**¹ These sectors include health, the environment, agriculture, transport, industry, food, water/sanitation, waste, energy, housing, construction, land use planning, education, labour, finance, social welfare and family, sports and leisure, civil defence or multiple sectors.
- **Level of implementation:** The levels are national, community, schools/childcare settings, health care and the workplace. The additional classifier "universal health coverage" has been added to guidance that directly contributes to achieving universal health coverage (often through prevention efforts provided by health workers in the community).
- **Instruments:** The instruments are governance; regulation; taxes and subsidies; infrastructure, technology and the built environment; other management and control; assessment and surveillance; information, education and communication; or other action.
- **Category of evidence:** This is included in the Guidance tables in the chapters updated for 2024. The categories are: A – WHO guideline, B – WHO best practice or strategy, or C – other UN best practice or strategy.

Although not systematically mentioned throughout the Compendium, most areas require adequate monitoring and evaluation, capacity-building and resource mobilization. In addition, all policies and plans should consider gender and equity when being established or implemented.

Messages for promoting health in the general population have been developed based on the guidance contained in this Compendium and can be used to more broadly promote health (see Annex 1: Messages on health and environment for the general public).

This Compendium is available in both print and online versions. References are included after each chapter.

¹ This classifier focuses on the main sectors responsible for planning and implementation. However, the early engagement of diverse sectors needs to take place to ensure active participation across sectors and effective implementation.

How to use the Compendium of WHO and other UN guidance on health and environment

Target audience

Practitioners and key decision-makers at national, regional and municipal levels

Environment

The environment in this compendium refers to the following environmental factors:

Air pollution



WASH



Solid waste



Chemicals



Radiation



Climate change



Nature and health



Safe environments and mobility



Safe and healthy food



Noise

Categories

Guidance was grouped under two categories:



Policies and actions

Awareness raising and capacity building

Classifiers

Guidance can be searched by the following classifiers:



Sector principally involved in planning/implementation

- Health
- Environment
- Agriculture
- Transport
- Industry
- Food
- Water/sanitation
- Waste
- Energy
- Housing
- Construction
- Land use planning
- Education
- Labour
- Finance
- Social welfare and family
- Sports and leisure
- Civil defence
- Multiple sectors



Level of implementation

- National level
- Community
- Schools/childcare
- Healthcare
- Workplace
- “Universal health coverage”



Instruments

- Governance
- Regulation
- Taxes and subsidies
- Infrastructure, technology
- and built environment
- Other management and control
- Assessment and surveillance
- Information, education and communication
- Other action



Category of evidence

- A – WHO guideline
- B – WHO best practice or strategy
- C – Other UN best practice or strategy

1.4 Links between diseases and environmental determinants of health

To target specific diseases, the environmental determinants or risk factors of greatest relevance can be identified through the risk–disease links shown in Table 1.1. In this way, suitable preventive action can be selected and integrated into disease control programmes.

Table 1.1. Indicative linkages between an environmental risk factor and a disease or injury^a

Disease or injury	Environmental risk factor													
	WASH	Indoor fuel combustion	Second-hand tobacco smoke	Ambient air pollution	Noise	Chemicals ^b	Housing	Recreational environment	Water resources management	Land use and built environment	Other community risks	Radiation	Occupation	Climate change ^c
Infectious and parasitic diseases														
Respiratory infections	●	●	●	●			●							
Diarrhoeal diseases	●							●						●
Intestinal nematode infections	●												●	○
Malaria									●		●		●	●
Trachoma	●													○
Schistosomiasis	●							●					●	○
Chagas disease							●							○
Lymphatic filariasis	●								●				●	○
Onchocerciasis									●				●	○
Leishmaniasis							●						●	○
Dengue							●						●	●
Japanese encephalitis									●				●	○
HIV/AIDS													●	
STDs													●	
Hepatitis B and C													●	
Tuberculosis		●					●						●	
Other infectious diseases	●						●		●				●	
Neonatal and nutritional diseases														
Neonatal conditions	●	●	●	●		●							●	○
Protein–energy malnutrition ^d	●										●			●

Disease or injury	Environmental risk factor													
	WASH	Indoor fuel combustion	Second-hand tobacco smoke	Ambient air pollution	Noise	Chemicals ^b	Housing	Recreational environment	Water resources management	Land use and built environment	Other community risks	Radiation	Occupation	Climate change ^c
Noncommunicable diseases														
Cancers		●	●	●		●					●	●	●	
Neuropsychiatric disorders					●	●	●						●	●
Cataracts		●										●	●	
Hearing loss					●	●							●	
Cardiovascular diseases		●	●	●	●	●				●			●	●
COPD		●	●	●									●	
Diabetes		●	●	●										
Asthma		●	●	●		●	●						●	○
Other respiratory diseases													●	○
Chronic kidney diseases						●							●	○
Skin diseases	●					●							●	
Musculoskeletal diseases	●												●	
Congenital anomalies			●	●		●						●	●	
Injuries														
Road traffic accidents							●			●			●	
Falls							●	●		●	●		●	
Drownings								●			●		●	●
Burns							●						●	○
Poisonings						●	●						●	
Other unintentional injuries							●	●		●	●	●	●	●
Violence						●	●			●			●	○
Self-harm						●	●			●			●	○

COPD, chronic obstructive pulmonary disease; **STDs**, sexually transmitted diseases.

^a Coloured dots represent attributable fractions; an attributable fraction is the proportional reduction in death or disease that would occur if exposure to a risk were removed or reduced to a minimum exposure distribution that is currently achieved in certain population groups. The ranges of the attributable fractions are:

● < 5%; ● 5–25%; ● > 25%; ○ influence likely but not yet quantifiable. The environmental attributable fractions are indicative values based on comparative risk assessments or expert opinion. They are discussed in further detail in reference (4).

^b Chemicals in this table are limited to industrial and agricultural chemicals and chemicals involved in acute poisoning.

^c Global climate change will increasingly influence all life on the planet. This table covers current risks to health. While hollow circles have been added to highlight likely future impacts of climate change on health, most future health impacts are not yet quantifiable.

^d This includes malnutrition and its consequences.

Source: Adapted from reference (4).

1.5 Links with social determinants of health

Many diseases and adverse health conditions, such as malnutrition, are strongly related to social determinants of health – which are the conditions in which people are born, grow, work, live and age – and the wider set of forces and systems shaping the conditions of daily life. Some social determinants of health, such as housing and certain basic amenities, are closely linked with environmental factors and are, therefore, considered in this Compendium. Other crucial social determinants of health are income or socioeconomic position, education, employment status, job security, and social support and inclusion. These are important causes of disease and disability but are not within the scope of this Compendium (24).

1.6 Governance

The Compendium provides policy-makers and other actors in countries with a comprehensive set of resources and guidance to support the implementation of actions addressing the relationship between health and the environment. Nevertheless, the success of these actions critically depends on the good governance of countries, regions or cities.

Governance is the intricate process of decision-making and the implementation of decisions that occurs whenever groups or individuals collaborate to achieve a common goal. This concept builds on three key dimensions: authority (i.e. identifying decision-makers), decision-making (i.e. the methods employed in decision processes) and accountability (i.e. mainly involving being answerable for decisions and actions) (25). Good governance should be the ultimate goal of all policy-makers. It ensures that corruption is minimized and that minority groups and vulnerable people in society are considered when decisions are made. Good governance is participatory, consensus-oriented, accountable, transparent, responsive, effective and efficient, and equitable and inclusive, and it follows the rule of law (25, 26). Participation, partnership and community empowerment are critical elements of good governance (27).

Although good governance should be intrinsic to any political decision, industry, certain lobbyists and special interest groups, a weak and ineffective legal system, or political corruption itself, might have a damaging influence on governance and the consequent decisions. Such influences can distort policy-making processes and prioritize special interests over the public good. Certain decisions about the environment (e.g. reducing air pollution, protecting nature and biodiversity, promoting healthy urban planning or ensuring adequate waste management, among others described in the Compendium) have a significant impact on a population's health and well-being. Therefore, it is imperative to ensure that political decisions truly serve the interests of all people.

Important actions governments can take to improve governance include establishing a strong mandate, showing political will, addressing community needs, acknowledging health inequities, involving the community in planning, creating a transparent and accountable delivery system, collaborating with partners to develop and implement integrated solutions, and continually monitoring and improving performance (27). Moreover, it is fundamental to minimize the influence of vested interests that prioritize their own benefit (whether political, economic or personal) over the broader public interest during the decision-making process, potentially resulting in corruption, unfair advantages or decisions that do not reflect the needs and values of society. Transparency is key to minimizing or avoiding the influence of organizations or people with vested interests by ensuring the disclosure of any potential conflicts of interest or relationships with stakeholders who have questionable interests.

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