



World Health
Organization

Air quality and health effects

WHO resources and support

In the beginning there
was...

*This report contains the collective views of an international
group of experts and does not necessarily represent the deci-
sions or the stated policy of the World Health Organization.*

WORLD HEALTH ORGANIZATION
TECHNICAL REPORT SERIES

No. 157

AIR POLLUTION

Fifth Report of the
Expert Committee on Environmental Sanitation

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2. Recognition and evaluation of potential or actual conditions of air pollution	4
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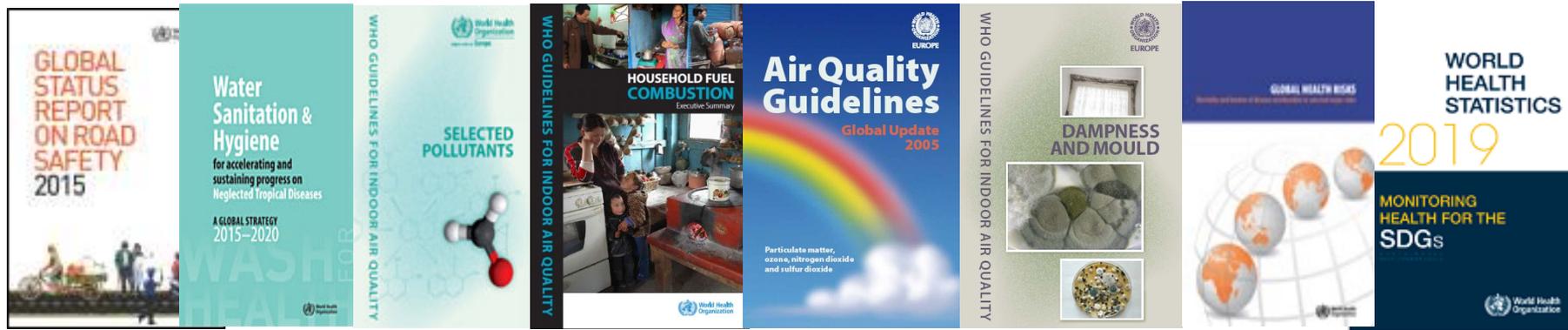
WORLD HEALTH ORGANIZATION
PALAIS DES NATIONS
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1958

WHO (1958). Air pollution: fifth
report of the Expert Committee on
Environmental Sanitation. Geneva:
World Health Organization (WHO
Technical Report Series, No. 157).

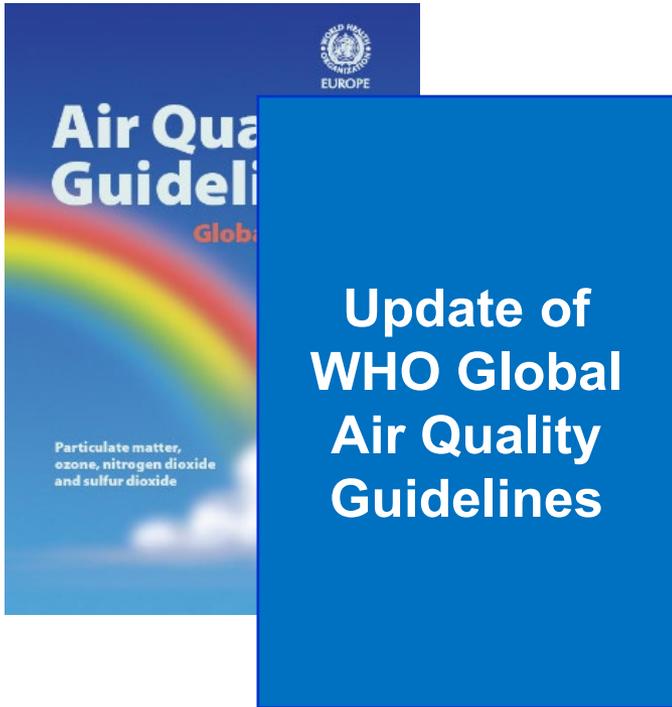
Health Sector Role

Synthesize Evidence; Develop Guidelines; Track Progress

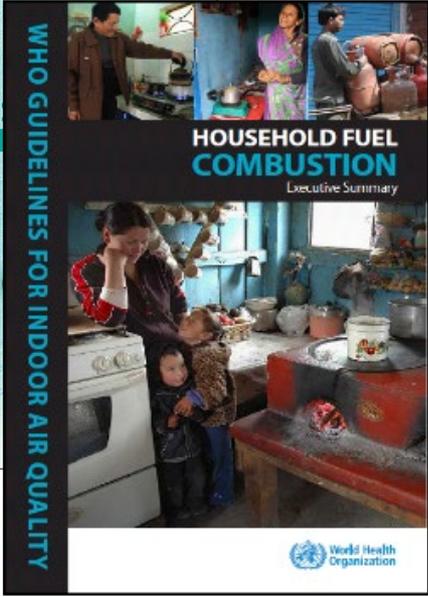
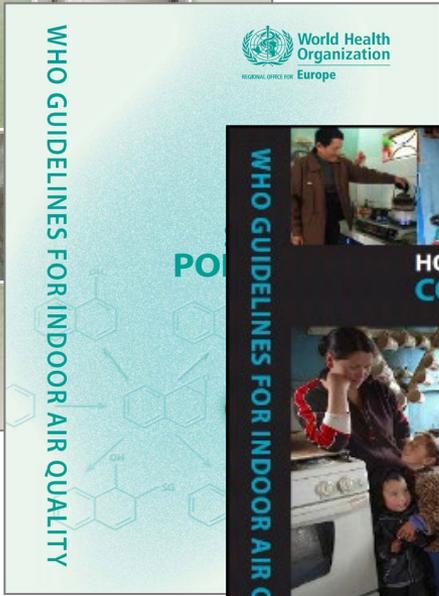
- Provide evidence based guidelines on health impacts of sustainable development & green economy strategies /technologies
- Develop evidence-based guidelines supporting effective interventions
- Use Health Impact Assessment (HIA) and other tools to assess policies and their health impacts
- Guide, define and monitor exposure and health indicators to measure results and contribute tracking to the SDGs (i.e. 7.1.2, 11.6.2, 3.9.1)
- Convene and advise Ministries of Health, Energy and Environment to effectively address public health issues



WHO guidelines for air quality



**Update of
WHO Global
Air Quality
Guidelines**



Evidence base :



- Future regular updated evidence on Air Pollution on Health?



English EN

Search

Home > Press corner > null

Available languages: English

Press release | 31 January 2013

Environment: Newly found health effects of air pollution call for stronger EU air policies

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Print friendly pdf



European Commission

Press release

Brussels, 31 January 2013

Environment: Newly found health effects of air pollution call for stronger EU air policies

Long-term exposure to fine particles (PM2.5) can trigger atherosclerosis, adverse birth outcomes and childhood respiratory diseases, according to a World Health Organisation (WHO) review released today. REVIHAAP – the “Review of evidence on health

“Review of evidence on health aspects of air pollution – REVIHAAP Project”

First results



This publication arises from the project REVIHAAP and has received funding from the European Union.

Evidence based

- Systematic reviews on interventions and pollutants
- Risk communication & health advisories
- Interventions & economic assessments

'Best buys' and other recommended interventions for the prevention and control of noncommunicable diseases

TACKLING NCDs

Policy options to address AP

Best buys

Defining clean, transitional and polluting household energy solutions based on carbon monoxide emissions

15 January 2019



Photograph taken by Jessica Lewis

Systematic Review of Health Effects of Dust and Sand Storms

Aurelio Tobías, Angeliki Karanasiou, Fulvio Amato, Xavier Querol

Institute of Environmental Assessment and Water Research (IDAEA), Spanish Council for Scientific Research (CSIC), Barcelona, Spain.

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tiers for pollutant levels, WHO would
are classified as clean, transitional a

Risk communication and personal level intervention to reduce exposure and to minimize the health effects of air pollution

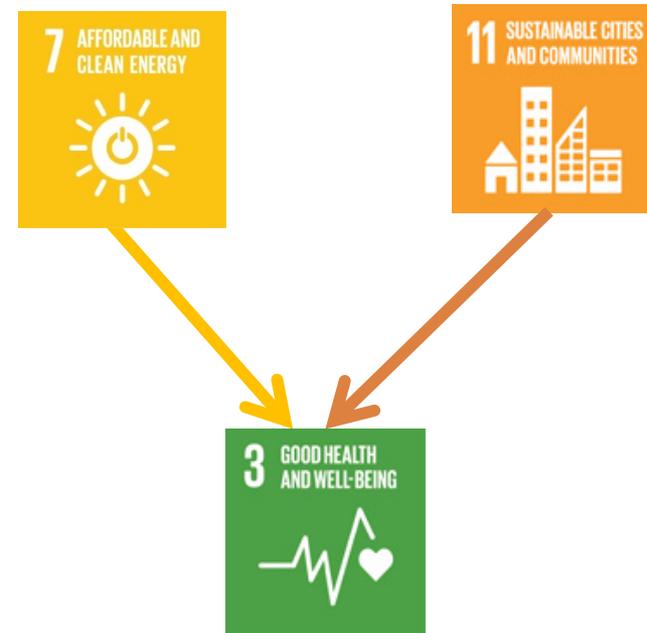
Summary report from the WHO Expert Consultation 12-14 February 2019, Geneva Switzerland

Please do not cite, quote or distribute

Monitoring and reporting

SDG reporting and associated activities

- Refinement of exposure to PM_{2.5}
- Further development of household energy use modelling
- Methods of exposure assessments (e.g. low cost sensors, ground monitoring stations, catalogue of methods)
- Methods and criteria for health impact assessments (incl. best practice guide)



Global Platform on Air Quality and Health



Regular expert gathering since 2014



- **Aim:** Strengthening countries capacity to address air pollution and related health risks through enhanced estimates of air pollution exposure
- **Wide collaboration:**
 - Research institutions (HEI, JRC)
 - National agencies (US EPA, SPF)
 - Space research agencies (NASA, JAXA)
 - International agencies (WMO, UNEP, IIASA, World Bank)
- Governance to be redefined to adhere to the WHO's rule

Outputs since the first meeting

- Systematic review on source apportionment

Atmospheric Environment 120 (2015) 475–483

Contents lists available at [ScienceDirect](https://www.sciencedirect.com)

Atmospheric Environment

journal homepage: www.elsevier.com/locate/atmosenv



Review article

Contributions to cities' ambient particulate matter (PM): A systematic review of local source contributions at global level

Federico Karagulian ^{a,*}, Claudio A. Belis ^d, Carlos Francisco C. Dora ^b, Annette M. Prüss-Ustün ^b, Sophie Bonjour ^b, Heather Adair-Rohani ^b, Markus Amann ^c

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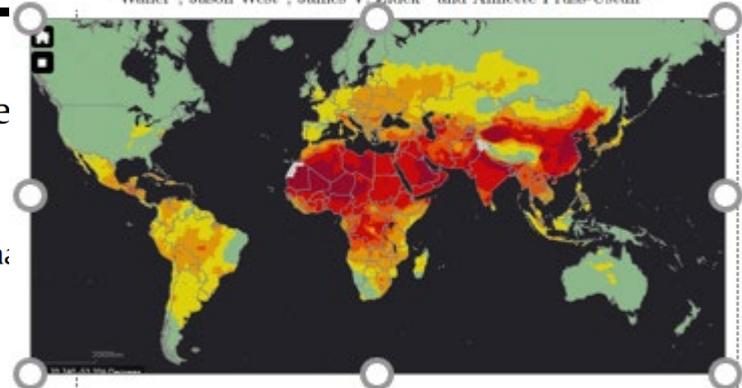
^b World Health Organization, Department of Public Health and Environment, 20 Avenue Appia-1211 Geneva 27, Switzerland

^c International Institute for Applied Systems Analysis (IIASA), Schlossplatz 1, A-2361 Laxenburg, Austria

^d European Commission, Joint Research Centre, Institute for Environment and Sustainability, Via Enrico Fermi 2749, Ispra, VA 21027, Italy

Data Integration Model for Air Quality: A Hierarchical Approach to the Global Estimation of Exposures to Ambient Air Pollution

Gavin Shaddickⁱ, Matthew L. Thomasⁱⁱ, Anna Joblingⁱ, Michael Brauerⁱⁱ, Aaron van Donkelaarⁱⁱⁱ, Rick Burnett^{iv}, Howard H. Chang^v, Aaron Cohen^{vi}, Rita Van Dingenen^{vii}, Carlos Dora^{viii}, Sophie Gumy^{ix}, Yang Liu^{ix}, Randall Martin^x, Lance A. Waller^x, Jason West^x, James V. Zidek^{xi} and Annette Prüss-Ustün^{xii}



Shaddick G. et al (2016), 'Data Integration Model for Air Quality: A Hierarchical Approach to the Global Estimation of Exposures to Ambient Air Pollution', Journal of the Royal Statistical Society (Series C).



Clean Household Energy Solutions Toolkit (CHEST)

Information & tools to transition to clean energy in the home



AirQ+ (air pollution)

ISThAT (transportation)

HEAT (walking and cycling)

GreenUR (green space)

HOMES (household energy)

Development and application of analytical tools to support the assessment of the health and economic impacts of interventions in key sectors, including on transport, household energy, green space and land-use, solid waste management (open source, flexible, evidence-based tools)

Air Pollution and Health – Toolkit for clinicians: in-person workshop



Modules for slide decks (Power Point presentations) and flipcharts

Training of Trainers (ToT) Manual

Information resources, communication and outreach material



WHO set a group of main contributors and expert reviewers for the material.

List of modules (some examples)



[Ongoing work]

Modules – the basics

An introduction to outdoor and indoor/household air pollution

Air pollutants and the sources

Monitoring ambient air pollution

Human exposure to air pollution

Health effects of air pollution: a general overview

Public benefit of air pollution interventions

Clean energy solutions at the household level

Warning systems – Air Quality (Health) Index

Public understanding of air pollution and health impacts

Regional challenges (ad hoc modules per WHO region)

Modules – for clinicians

Air pollution and cardiovascular diseases

Air pollution and respiratory system

Air pollution and children's health

Air pollution and the brain: neurological perspective

The role of clinicians: what they can do, which are challenges and future steps?

Special Epidemiological Modules

Assessing air pollution impacts

Surveillance and monitoring health data

How to build the scientific evidence and synthesize it

The Health and Energy Platform of Action (HEPA)



Vision:

Accelerating the transition to clean energy to improve health and livelihoods

How?

By strengthening the political and technical cooperation between the **health and energy sectors** through a **multi-stakeholder platform of action** (governments, civil society, UN, private sector), by building and/or strengthening existing national coordination mechanisms on energy and health policies and programmes

Initial focus:

Clean cooking and healthcare facilities



FIRST WHO GLOBAL CONFERENCE ON AIR POLLUTION AND HEALTH



IMPROVING AIR QUALITY, COMBATTING CLIMATE CHANGE – SAVING LIVES

30 October – 1 November 2018, Geneva, S

Voluntary Commitments at the First WHO Global Conference on Air Pollution and Health (Tot = 98)

Very high participation

About **900 participants**

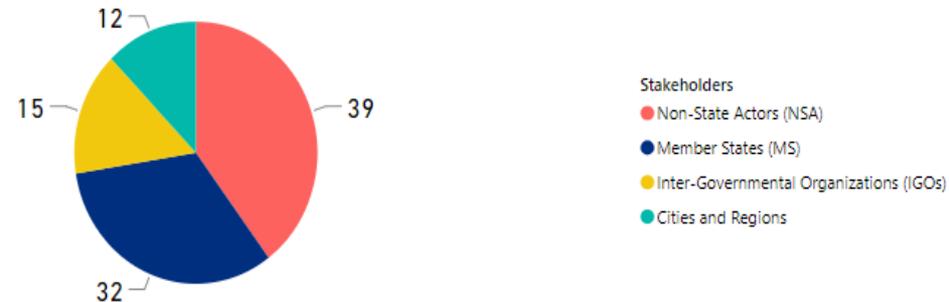
National and city governments, intergovernmental organizations, society, philanthropy, research and academia

Clean Air for All : Geneva Action Agenda

The outcomes of the conference call for enhanced action on a number of points highlighted at the conference:

www.who.int/phe/news/clean-air-for-health/en/

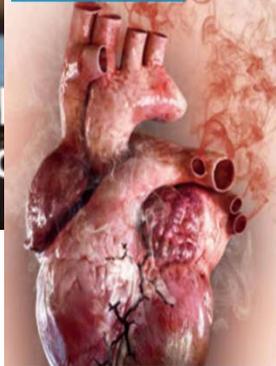
NB: This document does not reflect intergovernmental agreement or consensus, nor decisions reached by the attendees.





Air pollution topics

Ischemic heart disease IHD



Stroke AIR POLLUTION'S YEARLY HIT LIST.
1.4 million deaths due to stroke.
Let's stop this invisible killer.



Burden of disease BoD



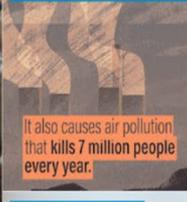
Household air pollution



Urban health



Co-benefits of air pollution and climate change policies



It also causes air pollution that kills 7 million people every year.

Air quality guidelines



Health effects of air pollution



COPD chronic obstructive pulmonary disease



TRAP Traffic-Related Air Pollution



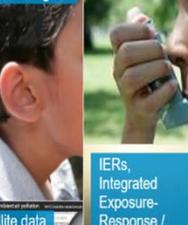
Ultrafine particles (UFP)



National policies



The perspective of pneumologists



Satellite data



Waste management



Black Carbon



Exposure modeling



IERS, Integrated Exposure-Response / YLLs, years of life lost & DALYs

Health surveillance



Desert dust



Value of Statistical Life (VSL)



Relative Risk Population



Health and the environment: addressing the health impact of air pollution

The Sixty-eighth World Health Assembly,

Having considered the report on health and the environment: addressing the health impact of air pollution;¹

Reaffirming its commitment to the outcome document of the Rio+20 Conference "The future we want", in which all States Members of the United Nations committed to promoting sustainable



World Health
Organization

SIXTY-NINTH WORLD HEALTH ASSEMBLY
Provisional agenda item 13.5

A69/18
6 May 2016

Health and the environment

Draft road map for an enhanced global response to
the adverse health effects of air pollution

Report by the Secretariat



World Health
Organization

EXECUTIVE BOARD
144th session
Provisional agenda item 5.6

EB144/15
5 December 2018

Health, environment and climate change

Draft WHO global strategy on health, environment and climate
change: the transformation needed to improve lives and well-being
sustainably through healthy environments

Thank you



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