# Health-relevant air quality data informing policy and the public – the WHO perspective

World Health Organization
REGIONAL OFFICE FOR Europe

**Improved environmental monitoring and assessment in support of the 2030 SD Agenda in South - Eastern Europe, Central Asia and the Caucasus – SEIS and the environmental dimension of the SDGs**

16 December 2020

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# Air pollution is a global public health issue

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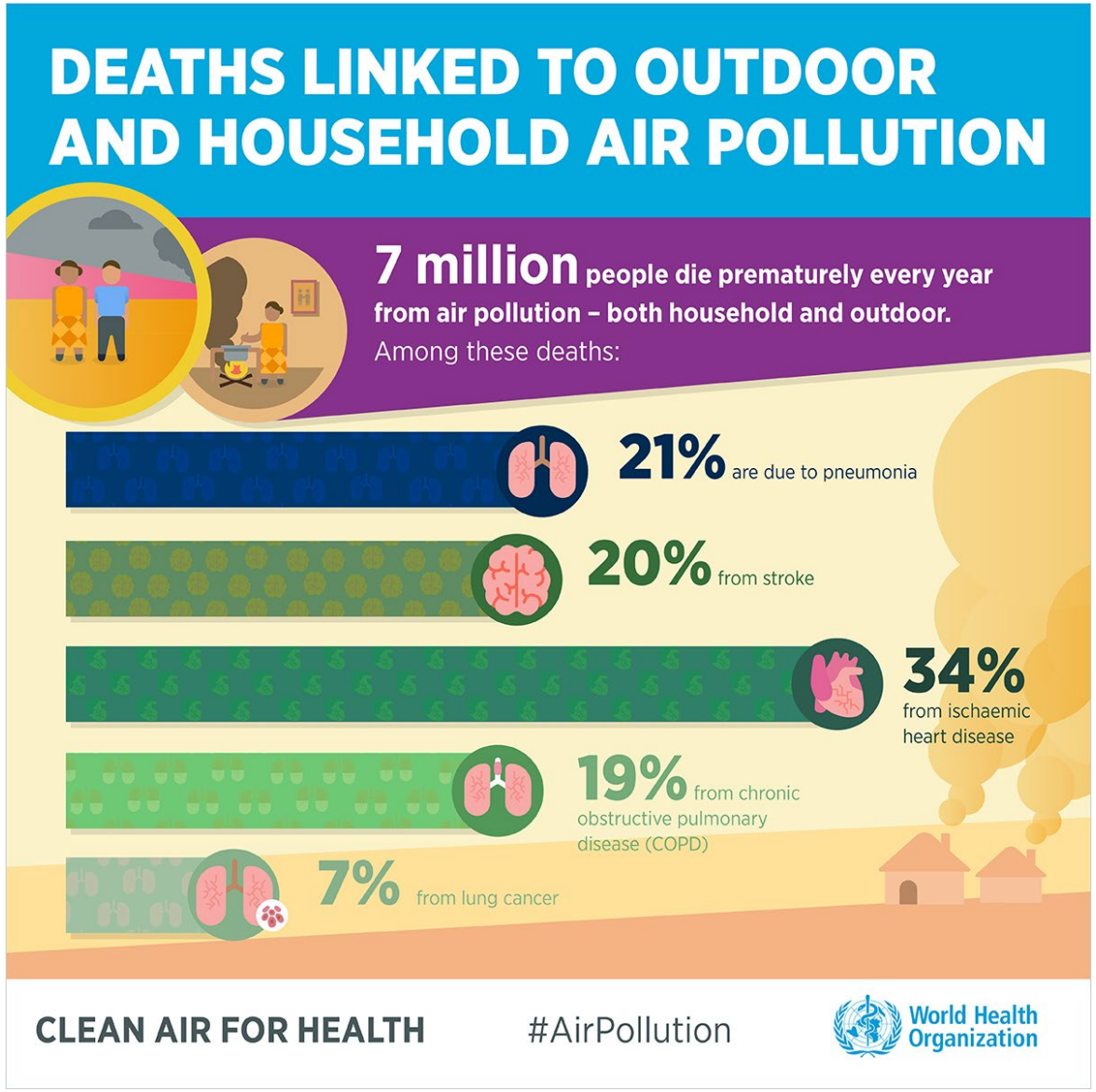


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## Globally

7 million premature deaths per year

4.2 million due to ambient air pollution

3.8 million due to household air pollution

## WHO European Region

550 000 premature deaths per year

509 000 due to ambient air pollution

56 000 due to household air pollution

# Health effects of air pollution - evidence for action

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- Evidence on health effects of air pollution has grown gradually over the last 6 decades
- Epidemiological studies from 1990s identified effects of low (common in urban environment) concentrations of “classical” air pollutants (PM, $NO_2$, $SO_2$ and ozone)
- Growing understanding of causal pathways of health effects of “classical air pollutants” in the last 10-15 years
- Estimation of global burden of disease due to air pollution in the last years

# WHO ambient air quality database

World Health Organization
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World Health Organization Ambient Air Quality Database Application

Interactive map | Explore the data | Notes and disclaimer | Terms of Use

## Pollutant

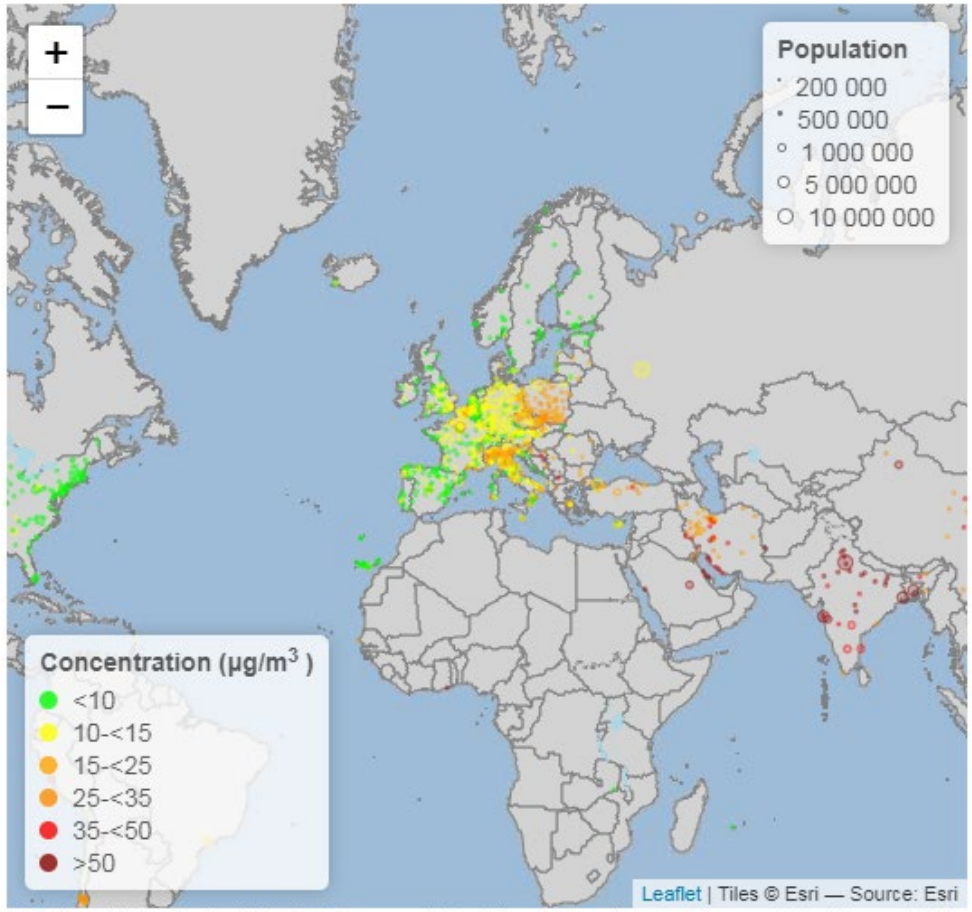
- (●) $PM_{2.5}$ (Particulate matter of less than 2.5 µm diameter)
- ( ) $PM_{10}$ (Particulate matter of less than 10 µm diameter)

## Year

2010 — 2016

2010 2011 2012 2013 2014 2015 2016

☐ Select the latest available year for each settlement






In **2018**,
more than **4300 cities**
in **108 countries**

www.who.int/airpollution/data/cities

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# Sustainable Development Goals and environment-health links


Prüss-Ustün A, Wolf J, Corvalan C, Neira M. Preventing disease through healthy environments. A global assessment of the burden of disease from environmental risks. Geneva: World Health Organization; 2016

# WHO is custodian of the air pollution related SDGs

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SDG 7.1.2: Percentage of population with primary reliance on clean fuels and technologies at the household level

SDG 11.6.2: Annual urban mean concentration of particulate matter (PM2.5), population-weighted

WHO household energy database

7 AFFORDABLE AND CLEAN ENERGY

11 SUSTAINABLE CITIES AND COMMUNITIES

WHO urban air quality database

3 GOOD HEALTH AND WELL-BEING

SDG 3.9.1: Mortality from air pollution

What : Household fuels types
From : Household surveys, census
Source: NSOs

What : Annual mean $PM_{10}$, $PM_{2.5}$
From : National monitoring networks
Source: MoE or other

# WHO tools: a software to quantify the health effects of air pollution

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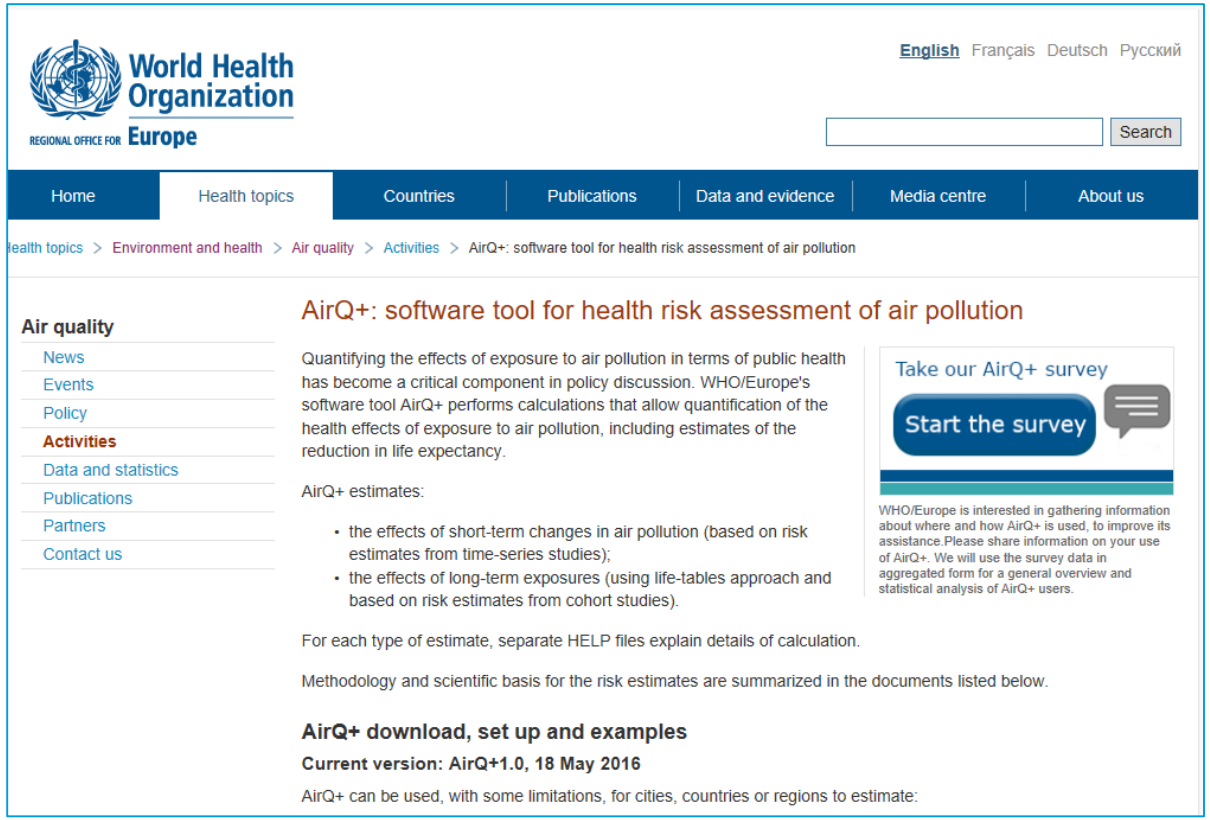


AirQ+

For calculating estimates that support decision-makers to develop appropriate actions to protect public health

Language versions: English (2016), Russian (May 2018), French (Oct 2018), German (upcoming), more languages to come….

# AirQ+ tool uptake

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Uptake of the tool (2016-2019):

| | |
|---|---|
| Countries: | 28 (2016-17) 84 (2016-19) |
| Cities: | 60 (2016-17) 164 (2016-19) |
| Used manly by: | Environment (50%) and Health sector (42%) |
| Main purpose: | research (62%) and policy interventions (29%) |
| Scale of analysis: | national (24%), regional (25%), local (49%) |

# AirQ+: national level testing and uptake

World Health Organization
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EXPERTISES

Avril 2019

TEST D'AIRQ+, UN OUTIL D'EVALUATION QUANTITATIVE DES IMPACTS DE LA POLLUTION DE L'AIR SUR LA SANTE

Retours d'expériences de onze collectivités en France

RAPPORT

ADEME

En partenariat avec :

Santé publique France

icare & consult


green-zones.eu

Menu

CRIT'Air

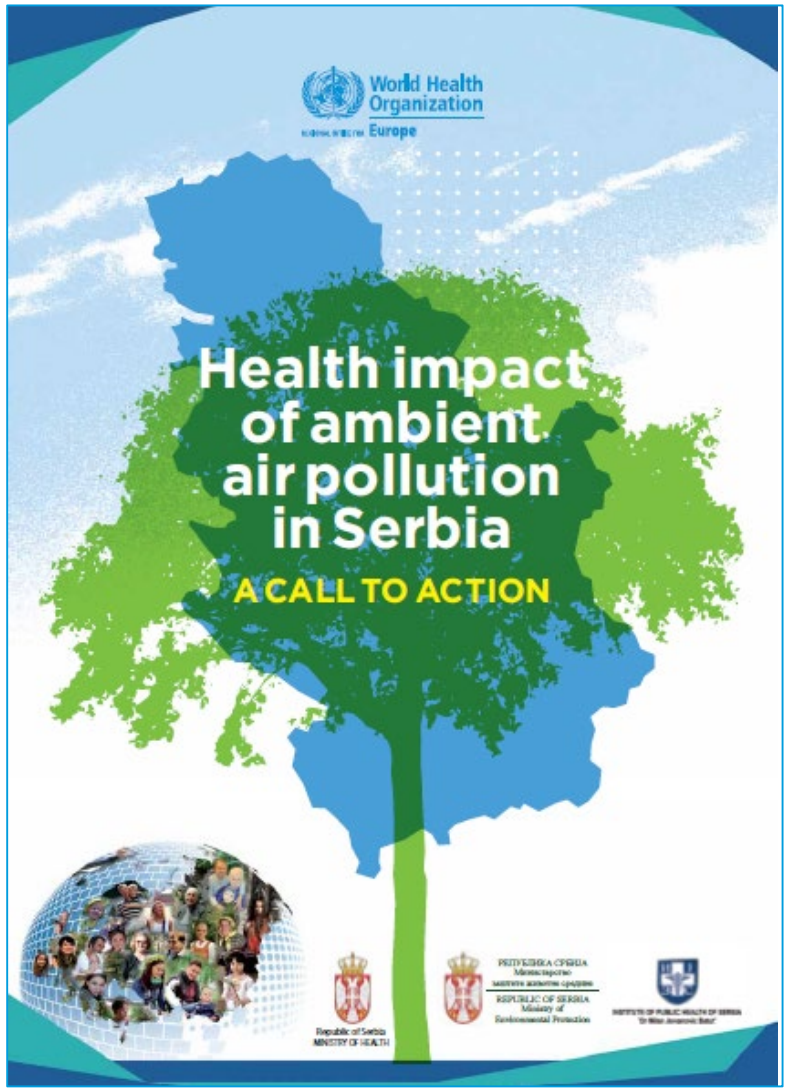
Crit-Air.fr › Aktuelles › 2018-07-22


22-07-2018

## Nice Metropolis: the AirQ+ tool

10 French cities, including Nice, will use the AirQ+ tool developed by the WHO to measure air pollution. Nice will be able to better understand the impact on the population. Also, to identify the positive effects of a decrease in air pollution on the health of its inhabitants in various scenarios and thus to promote reflection on improving the legal framework.

# AirQ+ tool application




## Assessments

Country-level and sub-regional

- Serbia
- Western Balkans
- ….

# AirQ+ tool application

World Health Organization
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## Capacity building

Sub-regional WHO training workshops on Air Quality and Health

- Sarajevo: Nov 2018, 26 participants from Western Balkans
- Tbilisi: Nov 2019, 20 participants from Armenia, Azerbaijan and Georgia
- *2020 Sub-regional training for Central Asia (postponed due to COVID-19)*

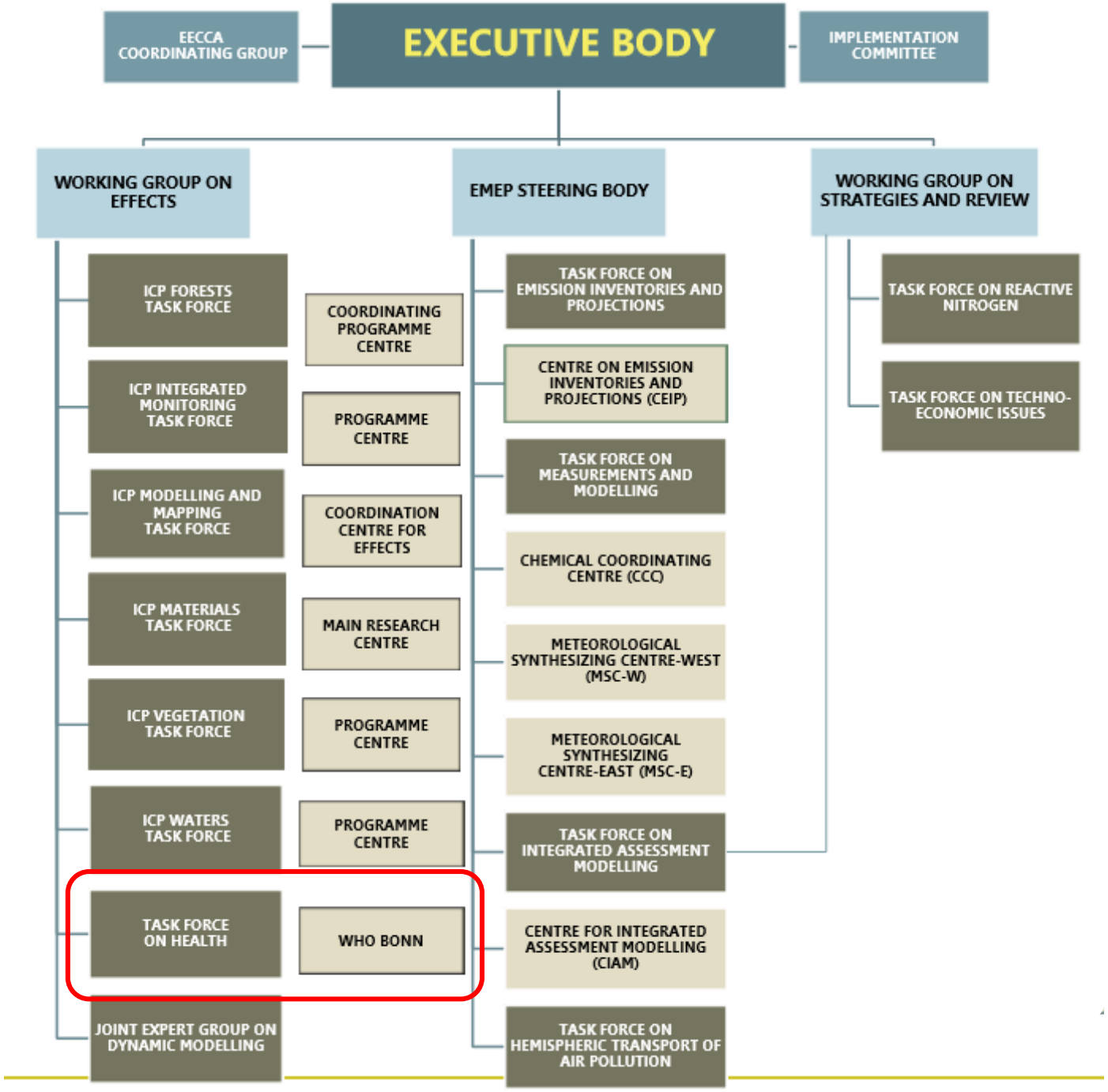
Environmental and public health experts

Mixed format: lectures, small group discussions, hands-on exercise

Cooperation with UNECE, UNEP, EEA

# Task Force on Health

- Established in 1998 within the UNECE Air Convention
- Dedicated to address the health aspects of air pollution
- Chaired by WHO ECEH



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Clean Air 40 YEARS

ENVIRONMENT

World Health Organization

# 40 years of success: The UNECE Convention on Long-Range Transboundary Air Pollution

**Presented on behalf of the UNECE Air Convention**

**Slides - courtesy of Mr Krzysztof Olendrzynski**

# Key facts

ENVIRONMENT

- Signed in 1979, entry into force in 1983
- First international treaty to deal with air pollution on a regional basis
- 51 Parties in the UNECE region
- Framework Convention with 8 protocols
- Emission reduction targets for several pollutants

- Results: Emission reductions by 40% to 80 % since 1990 in the region ($SO_x$: 70%, $NO_x$: 40%)

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# Areas of work

ENVIRONMENT

- **Policy**: international agreement setting emission reduction targets
- **Science underpinning policy**:
  - The Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) and the Working Group on Effects
- **Compliance monitoring**
- **Capacity-building** and **awareness raising**

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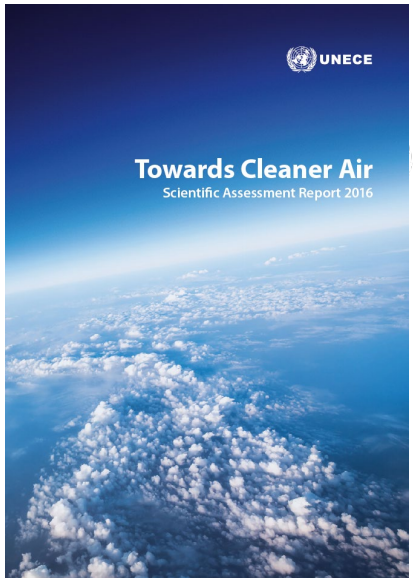
# Science

ENVIRONMENT

- Decoupling of economic growth and air pollution trends
- 600,000 premature deaths avoided annually
- Average life expectancy is today 12 months more than in a hypothetical unabated world.
- Recovery of forest soils and lakes

- **Remaining issues:**
  - Reduction of background levels in UNECE region calls for cooperation beyond the region
  - Ozone and particulate matter

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# Policy

ENVIRONMENT

- Exchange of experiences on strategies, policies and measures
- Emission Limit Values and guidance documents
- Batumi Action for Cleaner Air initiative
- Outreach and cooperation across scales: local, national, regional, global
- SDGs:


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# Capacity building

ENVIRONMENT

**Activities:**

Roundtable discussions on national legislation analyses and workshops on the development of national emission inventories in Eastern Europe, the Caucasus and Central Asia

**Results:**

Progress in emissions reporting and improved quality and completeness of reporting

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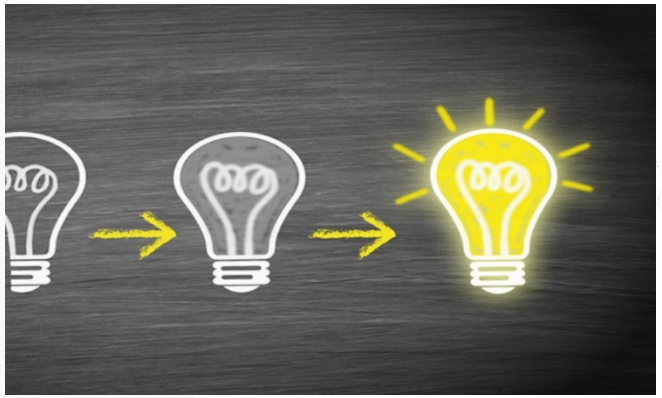
# Lessons learned

ENVIRONMENT



- Science-policy interface: development over time
- Strong expert network
- Financing: mix of mandatory and voluntary cash and in-kind contributions
- Policy guidance to Parties
- Exchange of experiences
- Capacity building to create level-playing field

# Priorities ahead

ENVIRONMENT

- Air pollution recognized as a problem at the global level
- Remaining issues: ground-level ozone, particulate matter
- Cooperation across the scales needed – local, national, regional, global
- Cooperation with organizations and networks beyond the UNECE region
- Lessons learnt from the Convention to contribute to solutions around the globe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# Thank you

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**European Centre for Environment and Health**

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