



## Green Week 2013

Planetary boundaries in the context of air quality: empowering actors to act,  
urgently



# Empowering the most vulnerable groups - How can you fight against air pollution?

- Air pollution and our health
- Empowering people

Poor air quality is extremely harmful to our health. How can we effectively fight threats air pollution poses to us? With a special focus on the most vulnerable groups, this presentation will show the negative effects of air pollution and suggest actions to be taken to empower people to actively fight against it.



Health and  
Environment  
Alliance

The **European Federation of Allergy and Airways Diseases Patients' Association (EFA)** is a non-profit network of **allergy, asthma and chronic obstructive pulmonary disease (COPD) patients' organisations**, representing 35 national associations in 22 countries and over 400,000 patients in Europe.

EFA is dedicated to making Europe a place where people with allergies, asthma and COPD have:

- the right to **best quality of care and safe environment**,
- **live uncompromised lives**, and
- are **actively involved in all decisions influencing their health** - including their **right to clean air**.

The **Health and Environment Alliance (HEAL)** is a not-for-profit organisation addressing:

- **how the environment affects health** in the European Union,
- demonstrating how policy changes can **help protect health**, and
- **enhance people's quality of life**.

HEAL has over 65 member organisations, representing health professionals, not-for-profit health insurers, patients, citizens, women, youth and environmental experts. HEAL was created to bring the health voice to the centre of a wide spectrum of EU environmental policies, and to **integrate environmental concerns in public health decisions**.



*“Citizens are entitled to clean air, just like clean water and safe food”*  
[European Respiratory Society, ERS, Ten principles for clear air]

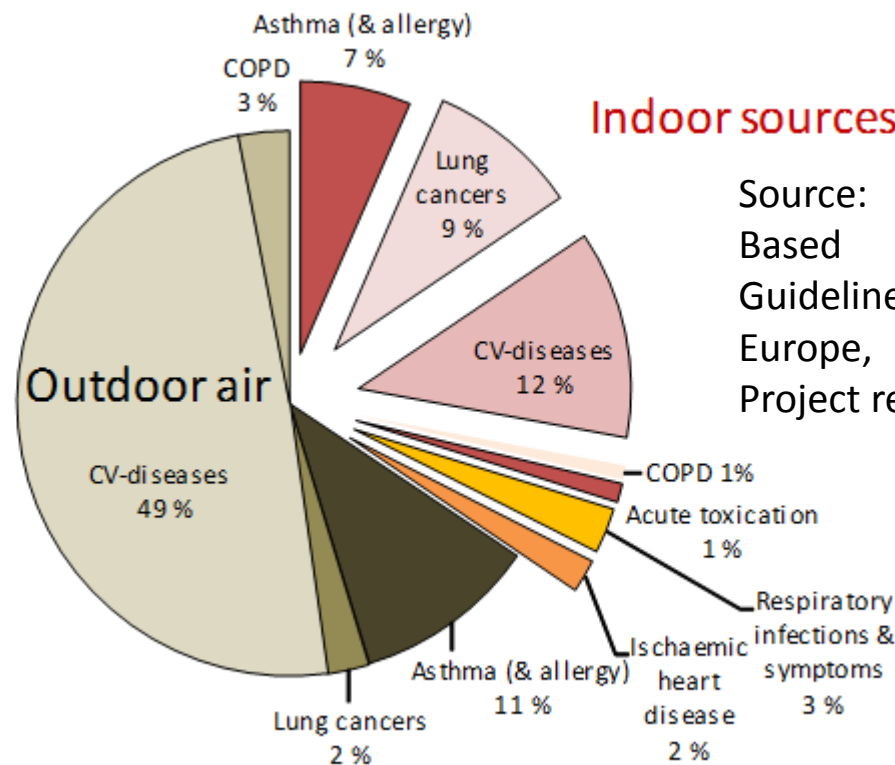
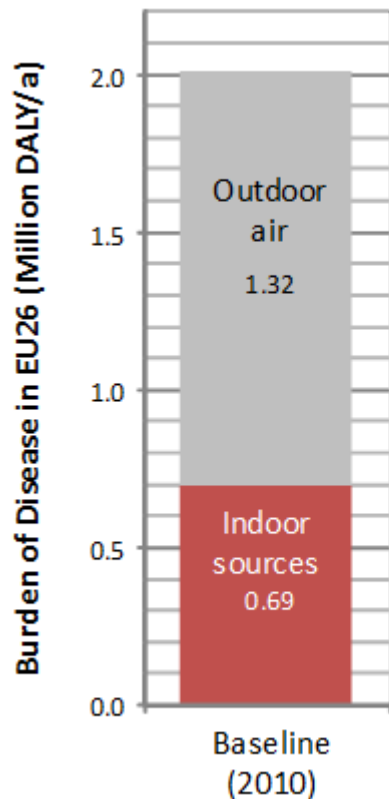
- Breathing is a prerequisite of life: we breathe from the moment we are born until the moment we die
- An adult breathes 15 m<sup>3</sup> of air every day: more air enters the body and the blood than any other substance

One of the objectives of the Sixth Environment Action Programme is to achieve *“levels of air quality that do not give rise to significant negative impacts on and risks to human health and the environment”*



This right is regularly breached in the EU as:

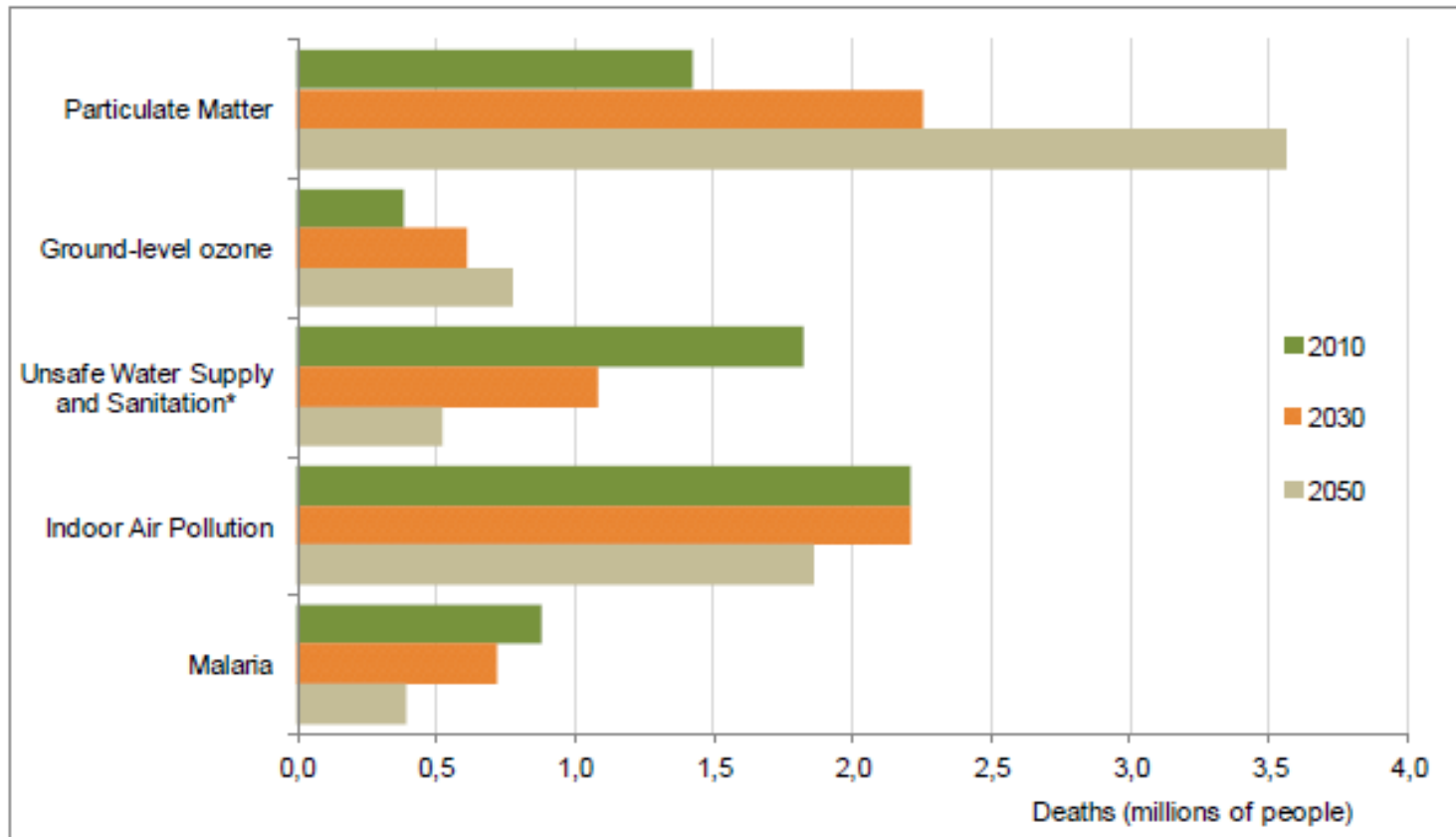
1. Both indoor and outdoor air pollution have negative short-term and long-term effects on people's health



Source: Health-Based Ventilation Guidelines for Europe, HealthVent, Project report



2. By 2050 (outdoor) air pollution will become the biggest environmental cause of premature death worldwide [Organisation for Economic Cooperation and Development, OECD, Environmental outlook to 2050]





3. In urban areas between 80 and 97% of EU population is exposed to levels of pollution above WHO guidelines (and up to 30% above EU standards) [European Environment Agency, EEA, Air quality in Europe – 2012 report]

Pollutant	EU reference value	Exposure estimate (%)	WHO reference level	Exposure estimate (%)
PM <sub>2.5</sub>	Year (20)	16–30	Year (10)	90–95
PM <sub>10</sub>	Day (50)	18–21	Year (20)	80–81
O <sub>3</sub>	8-hour (120)	15–17	8-hour (100)	> 97
NO <sub>2</sub>	Year (40)	6–12	Year (40)	6–12
BaP	Year (1 ng/m <sup>3</sup> )	20–29	Year (0.12 ng/m <sup>3</sup> )	93–94
SO <sub>2</sub>	Day (125)	< 1	Day (20)	58–61
CO	8-hour (10 mg/m <sup>3</sup> )	0–2	8-hour (10 mg/m <sup>3</sup> )	0–2
Pb	Year (0.5)	< 1	Year (0.5)	< 1
C <sub>6</sub> H <sub>6</sub>	Year (5)	< 1	Year (1.7)	7–8

Colour coding of exposure estimates fraction of urban population exposed to concentrations above the reference levels:

< 10 %	10–50 %	50–90 %	> 90 %
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In 2010, exposure to fine particulate matter (PM<sub>2.5</sub>) caused over **430,000 premature deaths** and was responsible for over **7 million lost years of healthy life** in Europe [World Health Organisation, WHO, Global burden of disease 2010]

Despite some improvements in recent years, most of the health problems are caused by four main pollutants: **particulate matter** (PM<sub>2.5</sub> and PM<sub>10</sub>), **ground-level ozone** (O<sub>3</sub>), **nitrogen dioxide** (NO<sub>2</sub>) and **sulphur dioxide** (SO<sub>2</sub>)



- Sulphur dioxide (SO<sub>2</sub>)

Source

- Contributes to respiratory diseases (especially in children and elderly)
- Aggravates cardiovascular and respiratory diseases (particularly in asthmatics)

Lung effects

- Avoid excessive exposure
- If you experience symptoms, go and see your doctor or take reliever medications if previously prescribed

Actions

- Nitrogen dioxide (NO<sub>2</sub>)

Source

- Increases incidence of asthma
- Increases the risk of dying from lung diseases
- Increases hospital admissions for lung conditions

Lung effects

- If you experience symptoms of asthma, shortness of breath or cough, go and see your doctor or take reliever medications if previously prescribed

Actions

## • Ozone (O<sub>3</sub>)



### Source

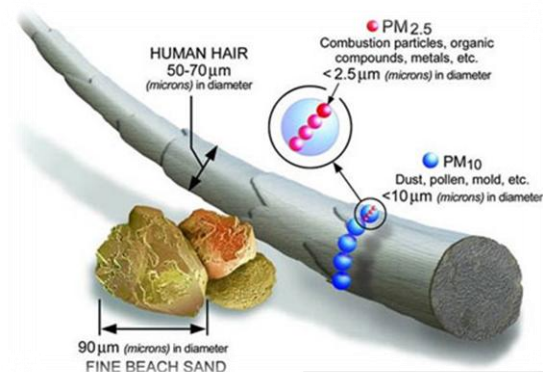
- Irritates the nose and throat; causes wheezing, coughing, pain when taking a deep breath; causes breathing difficulties during exercise or outdoor activities
- Reduces lung capacity
- Aggravates asthma
- Increases vulnerability to respiratory diseases, increases the risk of dying from lung and heart diseases
- Increases hospital admissions for lung diseases

### Lung effects

- Avoid exercising outside
- If you experience symptoms of asthma, shortness of breath or cough, go and see your doctor or take reliever medications if prescribed

### Actions

## • Particulate matter (PM)



### Source

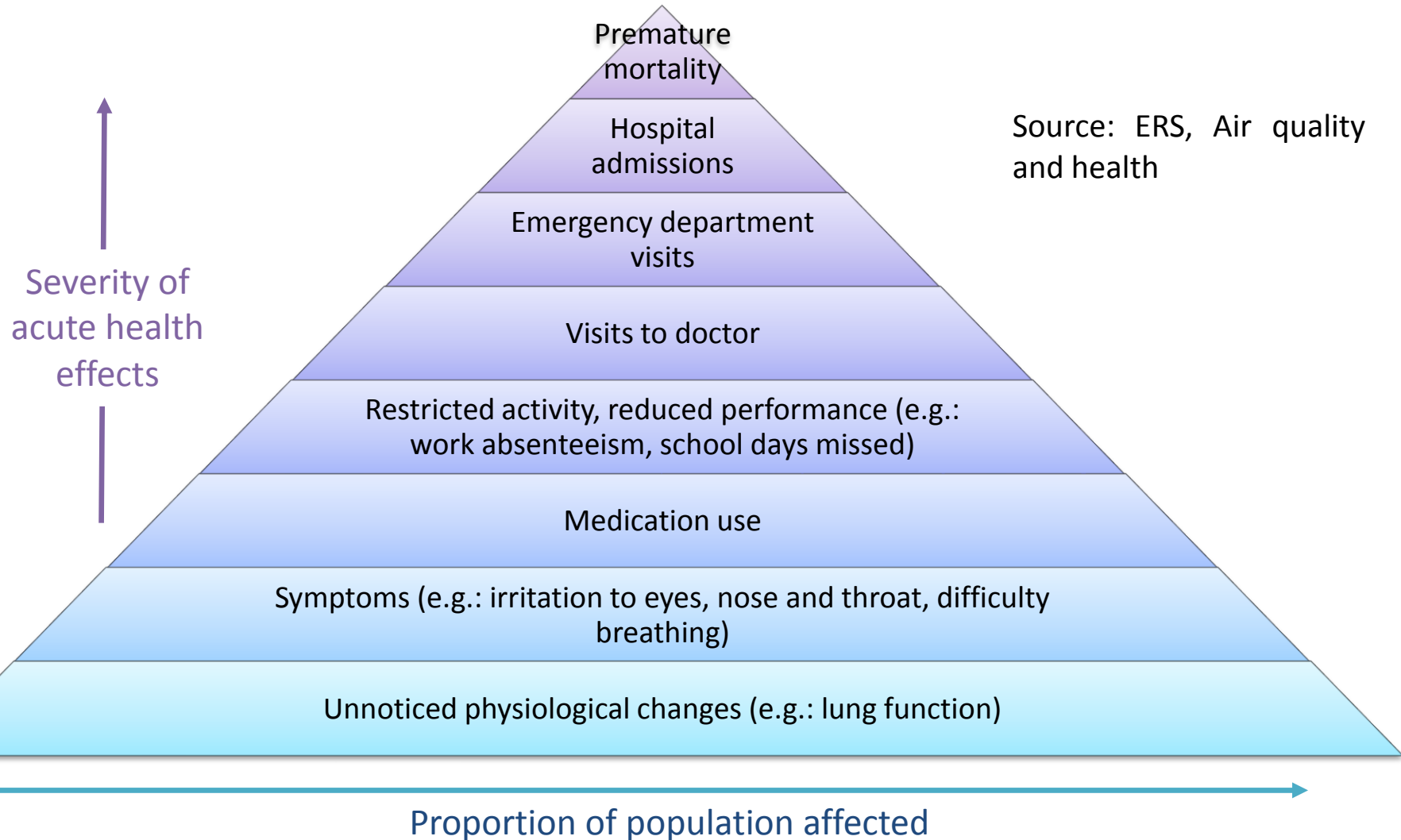
- Irritates the nose and throat
- Increases hospital admissions for lung conditions
- Causes early deaths from heart and lung diseases

### Lung effects

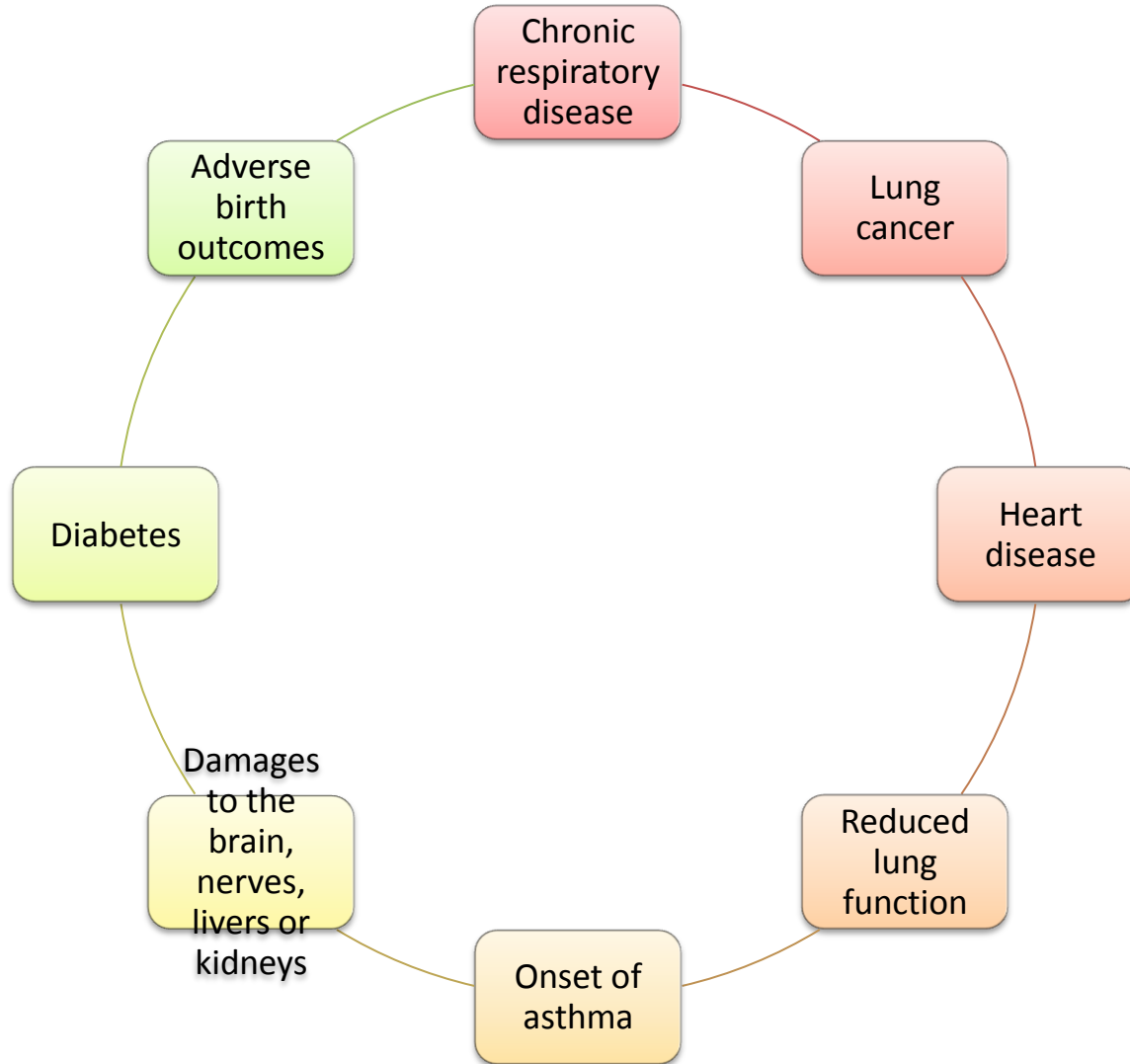
- Avoid exercising outside
- If you experience symptoms of asthma, shortness of breath or cough, go and see your doctor or take reliever medications if prescribed

### Actions

# Short-term exposure to pollution



# Long-term exposure to pollution





People are not equally affected by air pollution, vulnerable groups include:

- Elderly
- Children
- Pregnant women
- Patients already suffering from respiratory diseases
  - Asthmatics suffer more on or after days with higher pollution levels
  - COPD patients experience more exacerbations
  - Air pollution causes heart attacks and strokes in cardiovascular patients
  - Diabetics are more affected by acute cardiovascular effects of air pollution

87% of Europeans think that both respiratory diseases, and asthma and allergy are a serious problem caused by air pollution, while almost all of them (92%) consider cardiovascular diseases as a severe concern [Eurobarometer, Attitudes of Europeans towards air quality]



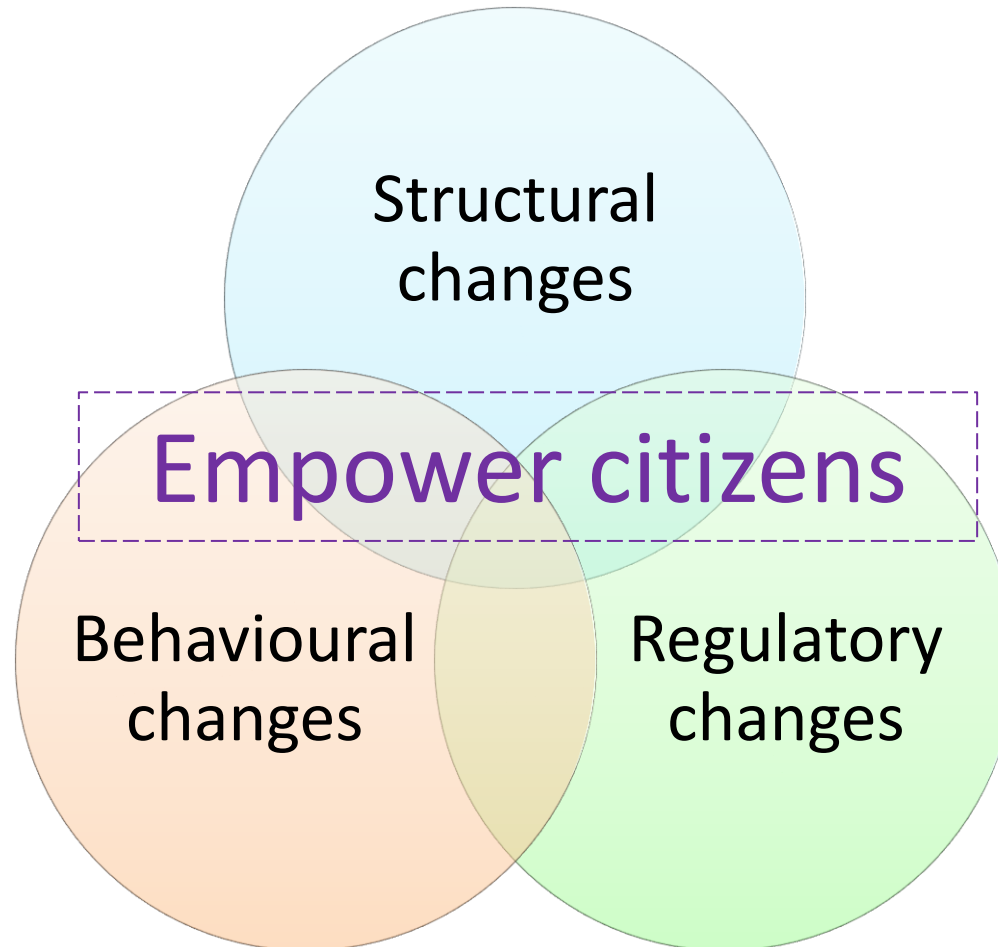
“I would like the air to be cleaner, to make breathing easier, and I would like children with asthma to grow up to have a future without the problem of environmental pollution”

[Soledad Alonso Mostaza, EFA Fighting for breath]

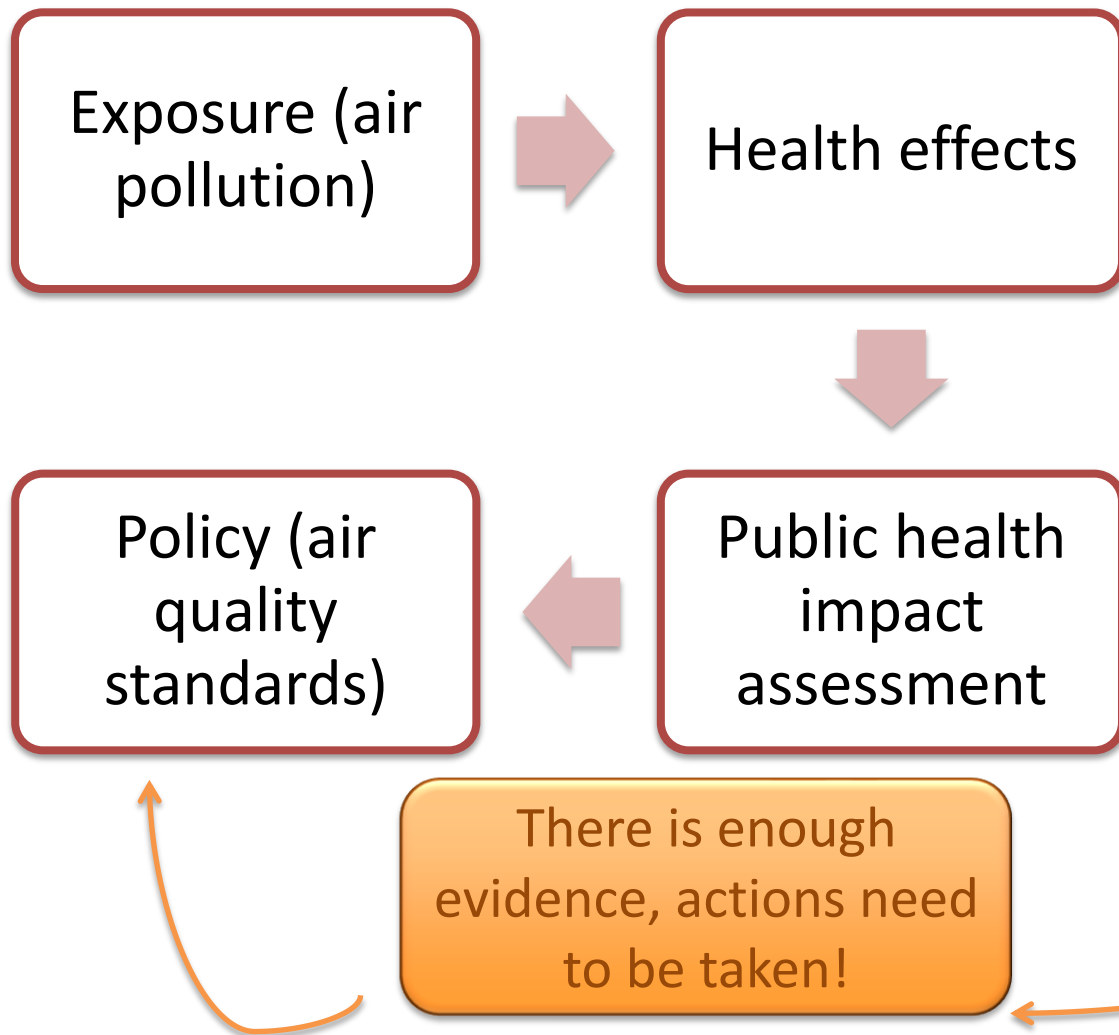




How to change the current course?



## Regulatory changes



Benefits outweigh the costs:

- **Health gains:** 0.8 million years of healthy life gained in Europe by 2025 as a consequence of the reduction of PM2.5 exposure [Thematic Strategy on Air Pollution, TSAP, Stakeholders meetings documents]
- **Economic gains:** 31.5 billion EUR monetary health benefits every year as a result of compliance with WHO guidelines on fine particles [Improving Knowledge and Communication for Decision Making on Air Pollution and Health in Europe, APHEKON, Project report]; 70 million days of restricted activity less amongst those of working age [TSAP, Stakeholders meetings documents]



# Regulatory changes



## Objectives:

1. Adoption of ambitious emission reduction commitments in the revision of the National Emission Ceiling (NEC) directive for existing and “new” pollutants
  - PM2.5 in line with the revised Gothenburg protocol + methane, black carbon and mercury
2. Adoption of sector legislation to cut emissions from all major sources
3. Enforcement and strengthening of ambient air quality limit values
4. Reduction of indoor air pollution

## Means:

- a) Revision of EU air legislation
- b) More ambitious Seventh Environment Action Programme
- c) International cooperation: pollution without borders

# Behavioural changes



1. Think seriously before using your car, consider the benefits of other modes of transport, like **cycling**, **walking** or **using public transport**: increased safety, reduced congestion, better health by ensuring you meet WHO recommended 20 minutes of exercise every day, save time and money
2. If using the **car** is necessary, think about car sharing, turn off your engine while stationary, maintain your car properly, reduce air conditioning and your speed
3. Reduce your energy consumption at **home**, if possible by switching to clean renewable energy sources, do not breathe in hazardous materials (read hazard labels) and stop burning solid fuels, particularly rubbish or treated woods
4. Buy “**green**” and “**efficient**”

# Behavioural changes



5. Read **labels** and make healthy informed choices
6. Check the **daily air quality forecast** in your area and plan your activities accordingly
7. Rather than walking or jogging along roads where **traffic** flow is heavy, use adjacent streets with low or no traffic (pedestrian zone)
8. Especially in periods of summer smog, shift **outdoor activities** to morning hours; at times of very high particulate pollution, schools may choose to organise their sporting events in indoor arenas rather than outdoors
9. If necessary, use an effective **breathing mask**
10. **Get involved** with citizens in Europe to ensure your lungs are protected and the air in your city clean

# How to empower citizens?



## I. Deliver a clear message

- There is evidence that no level of air pollution is safe for health, **why this science has not been translated into policies and actions?**

## II. Inform effectively

- **3 out of 5 Europeans do not feel informed** about air quality and policies in the EU [Eurobarometer, Attitudes of Europeans towards air quality]

Authorities/NGOs  
Top-down

III. Find broader support and enhance cooperation between actors

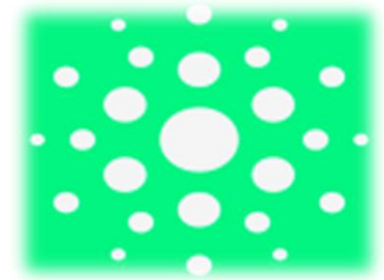
IV. Voice the opinion unanimously

V. Start and support grassroots campaigns and local initiatives

VI. Up-scaling at the regional, national and international level

Bottom-up  
Citizens

## Some examples from EFA's members



Polish Federation of Asthma, Allergy and COPD Patients' Organisation

→ Research programme (2008-2012) of the health status of people living close to busy roads

- Long-term residence near a busy street can significantly influence the exacerbation of respiratory health status
- Lung parameters statistically significant lower among inhabitants of Warsaw in comparison to rural areas residents

→ Results presented to authorities with recommendation to limit traffic exposure

## Some examples from EFA's members



### Asthma Society of Ireland

- National campaign to ban smoky coal
  - 359 lives saved every year in Dublin since smoky coal was banned in 1990 – more than 8,250 people in total
  - 470,000 people in Ireland have asthma, the fourth highest prevalence worldwide – more than one person a week in Ireland dies from asthma
- Minister intends to introduce a ban on smoky coal across the country within the next 3 years

## Some examples from EFA's members



→ Finnish Pulmonary Association (FPA) and Allergy and Asthma Federation joint “Indoor Air Quality and Renovation” advice service



→ FEDERASMA cooperated with Italian Ministry of Health, providing patients' perspective, by participating in GARD Italy (Global Alliance against Chronic Respiratory Diseases) working groups on health and environment



→ Swedish Asthma and Allergy Association ombudsman for indoor air quality



→ Nordic indoor air quality help-lines

## Other examples



Influencing authorities' urban planning and traffic management decisions having public health outcomes:

- Deciding on the location of schools, day care institutions and sports grounds
- Providing footpaths and bike lanes away from busy roads
- Introducing low emission zones and limiting traffic in residential areas



# What are EFA and HEAL doing?



Revamping the website “Know your air for health”  
<http://www.knowyourairforhealth.eu/>

- Air pollution: what is it and how to reduce it?
- Health effects: focusing on the most vulnerable groups
- Take actions: actively participation of citizens
- Testimonies

To be launched in July to feed into the air quality legislation review!

## Know your **air** for health



Health effects

Your right to cleaner air

Useful links





Thank you for your attention!