

# PRONET

## Pollution Reduction Options **NET**work

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# Background I

- Environmental Health
  - preventing or controlling those diseases or deaths that result from interactions between people and their environment (CDC)



# Background II

- Environmental Health at GGD Arnhem
  - Advice
  - Research
  - Chemical Incidents
  - Projects

*Hulpverlening Gelderland Midden*

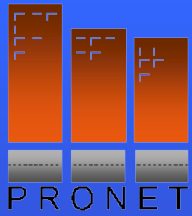


*brandweer en volksgezondheid/GGD*

# Motivation

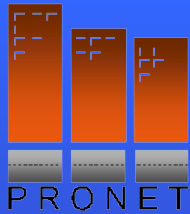
- Environmental health is becoming more important in Europe
- Lack of communication between Member States





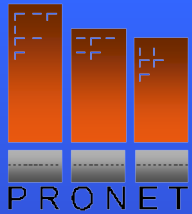
# What we face

EU strategy emphasises the importance of developing close cooperation on one hand between the environment, health and research communities, and on the other hand between the European Commission, Member States, stakeholders and international organisations



The Action Plan has four main functions:

- improving the information chain to understand the links between sources of pollution and health effects;
- filling the knowledge gap by strengthening research and addressing the emerging issues on environment and health;
- developing preventive policy, in terms of improving knowledge of exposure, exposure-effect relations and occurrence of the relevant health effects;
- reviewing policies and improving communication.



## Pollution Reduction Options **NET**work

International co-operation is needed to exchange knowledge and facilitate dissemination at the national level

Fill the gap by systematic exchange of information among Member States on (regional) activities concerning environmental health risk reduction options

# Areas

- Improvement of indoor air quality
- The reduction of traffic-related health hazards



# Objectives

- 1) Development of an information base on useful practices
- 2) Organisation of a platform for relevant stakeholders
- 3) Contribution to policy development
- 4) Dissemination of the results to stakeholders

# Partners

- 1) Public Health Services Gelderland Midden (Arnhem)
- 2) Ministry of the Environment (Düsseldorf)
- 3) Ministry VROM (The Hague)
- 4) Stockholm County Council (Stockholm)
- 5) RIVM (Bilthoven)
- 6) National Environmental Research Institute (Copenhagen)
- 7) Medical University (Vienna)
- 8) Agència de Salut Pública (Barcelona)

# Timespan

- Project started at January 1, 2007
- Duration of 3 years
  - 2 years, collecting studies and contacts
  - 1 year, dissemination



# Topics Indoor Air

- Ventilation
- Noise
- Passive smoking
- Radon



# Children, Housing and health

Life expectancy raised from 50 to 80 years in less than a century, when the housing stock has been renewed only up to 60%

One can spend more than 20 years of his life in a dwelling which has not been designed modern way of life

Leisure time has considerably increased these past 50 years, together with time spent at home

# Children, Housing and health

The residential environment is not adapted for new ways of life which call for more socialization and physical activities, more use of consumer products

The number of people with physical limitations living in their own dwelling increases regularly

Housing stock, and housing regulations do not consider these new features properly.

# Children, Housing and health

Expectations from the population in terms of hygiene, comfort and safety are very different from what they were during the past century

The indoor environment has become more chemical than previous decades

# INDOOR EXPOSURE

**Level of economic development is a key factor**

- Developing and industrialized countries
- Rural and urban areas
- Local climate
  - ⇒ architecture/ventilation



WHO

In urban areas, **children** may spend most of their time indoors.

⇒ most exposure to contaminants may come from air and environment inside homes and schools.

# INDOOR EXPOSURE

Time spent indoors is influenced by:

- Geographical region:
  - Seasons and temperature
  - Urban or rural area
- Level of development of the region
- Cultural aspects
- Socioeconomic factors

# HOMES SHOULD BE HEALTHY PLACES

**The homes of poor children may be unhealthy places:**

- **2 000 000 deaths from ARI in < 5 yr olds (1/2 due to solid fuel use)**
- **Rising trends of “wheezing”**
  - **Coal and biomass fuel: a major source of indoor air pollution**
  - **Suspended particulate matter increases risk of acute respiratory infections**
  - **CO and other toxic gases may impair development and health**
  - **Second-hand tobacco smoke is a major concern**

# APPROACHES TO REDUCE INDOOR AIR POLLUTION

1. Eliminate or control the sources of pollution
  - Regular maintenance of cooking, heating and cooling systems
  - Choose non-volatile, non-toxic building materials
2. Ventilation – building design
  - Dilute and remove pollutants through ventilation with outdoor air
3. Air cleaning – NOT air fresheners
  - Air filters and ionizers may remove some airborne particles
  - Gas adsorbing material is used to remove gaseous contaminants

# PREVENTION OF EXPOSURE

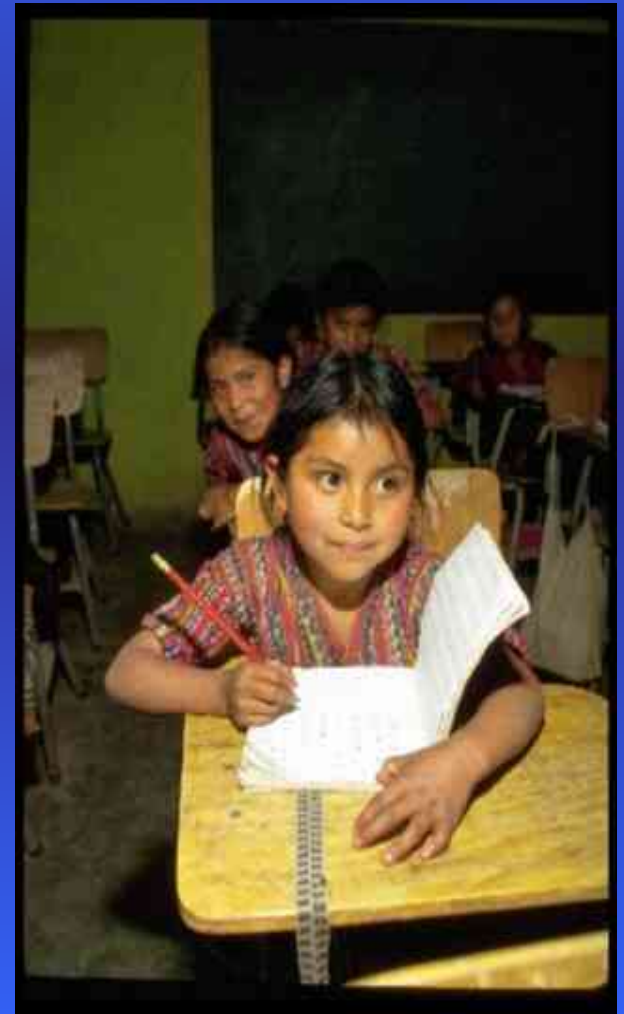
## Education of:

- Family, including children
- Health care providers
- Technical experts

## Environment policy-making

- Community actions
- Regulatory actions

## Research



# Example Indoor Air I

- Coal burning produces  $\text{CO}_2$ ,  $\text{NO}_x$  and  $\text{SO}_2$
- Coal sales was banned in Dublin, on September 1, 1990
- Study was performed to review health effects, before and after the ban on coal sales

# Example Indoor Air II

- Results were reviewed after 72 months
  - Decline in respiratory deaths: 116
  - Decline in cardiovascular deaths: 243
- This example shows a direct association between pollution and public health

# Interventions Traffic

- Public Transport
- Limit values for emission of vehicles
- Speed limits
- Methods for noise reduction

# Example Traffic I

- Houses near busy roads have to cope with pollution from traffic (Particulate Matter)
- An area in North Wales was identified with heavy road traffic
- A by-pass was constructed, which could improve the situation
- Health status was reviewed, before and after the by-pass

# Example Traffic II

- Heavy traffic declined by 50%
- Adverse health effects declined after the by-pass was constructed
- Health status from people suffering from nose cold improved significantly

# PRONET

Quest for a healthy Europe