

4<sup>th</sup> International Conference on Children's Health and the Environment  
Reducing environmental risks for our children  
Vienna, Austria

*10-12 June 2007*

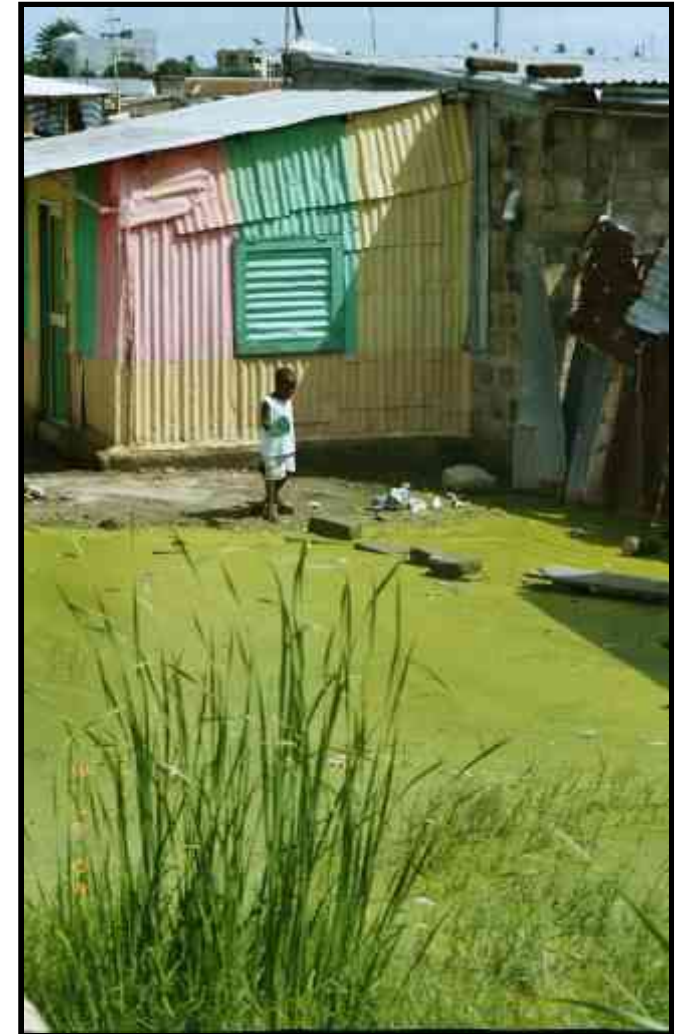
**ENVIRONMENTAL THREATS TO  
CHILDREN'S HEALTH:  
A GLOBAL PROBLEM**



**World Health  
Organization**

# Every year more than 3,000,000 children under five die due to preventable diseases linked to the environment

<b>Diarrhoeal disease</b>	<b>1,600,000</b>
<b>Respiratory diseases</b>	<b>1,000,000</b>
<b>Malaria/vector-borne disease</b>	<b>1,000,000</b>
<b>Poisonings/Injuries (0-14 years)</b>	<b>300,000</b>



# Childhood mortality

**The 1.6 million deaths each year from diarrhoeal diseases are mainly caused by unsafe water and poor sanitation**

- **Studies suggest that diarrhoeal episodes can be reduced:**
  - **Between 35-39% through household treatment and safe storage of water**
  - **By 37.5% for improved sanitation and**
  - **By 35% through hand-washing**

**Indoor air pollution associated with the still-widespread use of biomass fuels, kills over one million children annually, mostly as a result of ARI**

**Nearly one million children under the age of five die of malaria every year, mostly in Africa**



# How significant is the impact of the environment on health?

- **Environmental factors contribute to 85 of the 102 major diseases of the World Health Report (2004)**
    - **24% of the global disease burden (*healthy life years lost*)**
    - **23% of all deaths**
- |                            |            |
|----------------------------|------------|
| In developing regions:     | <b>25%</b> |
| In industrialized regions: | <b>17%</b> |

**In children, the environment can account for over 1/3 of the disease burden and 36% of deaths in the 0-14 years olds**

# Main Global Environmental Health Risks

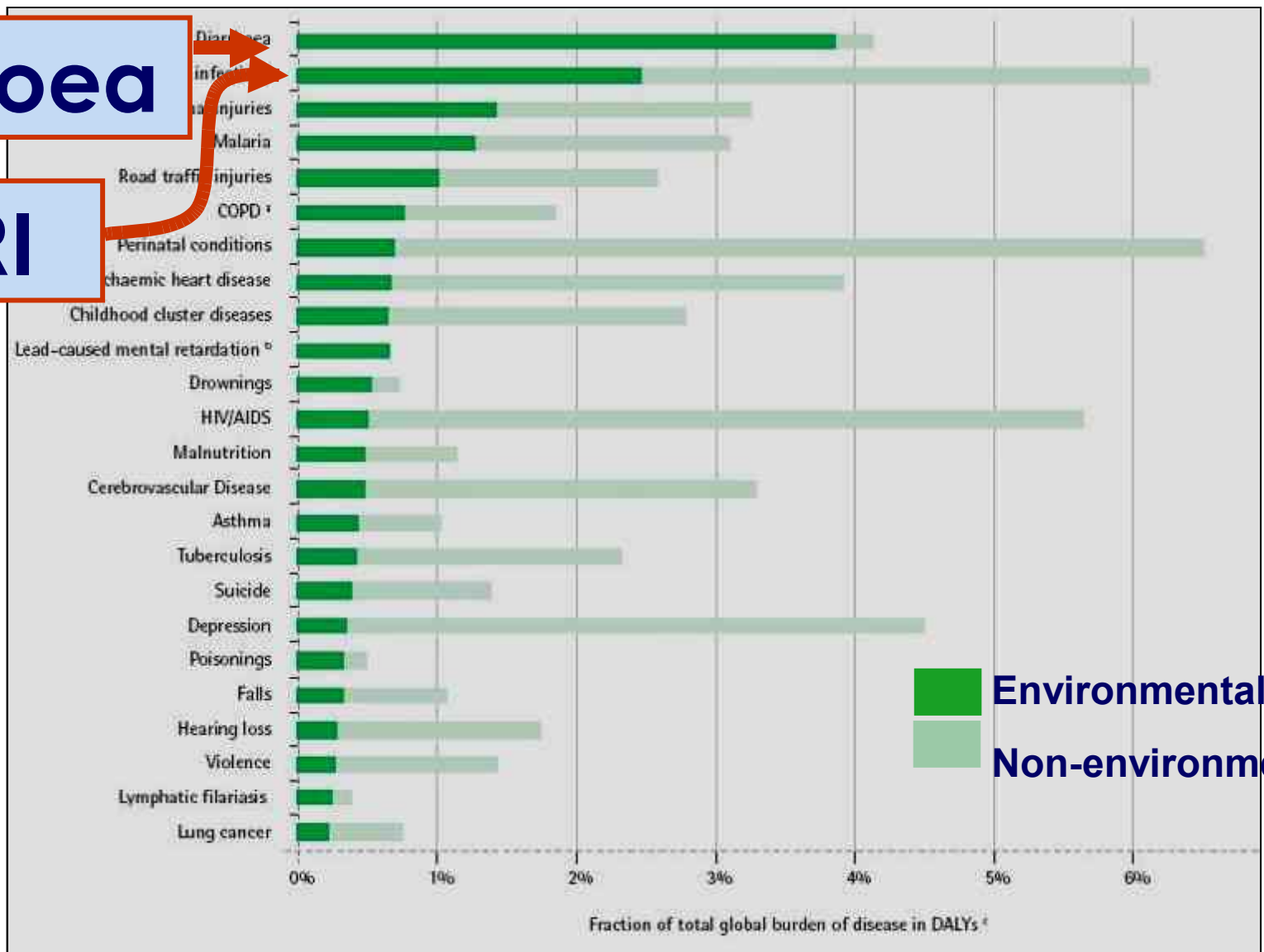
- Poor hygiene and sanitation
- Air pollution – indoor and outdoor
- Household water insecurity
- Disease vectors
- Chemical hazards
- Injuries and accidents
- Global environmental change
- **...EMERGING ISSUES!**



# Diseases with the largest environmental contribution

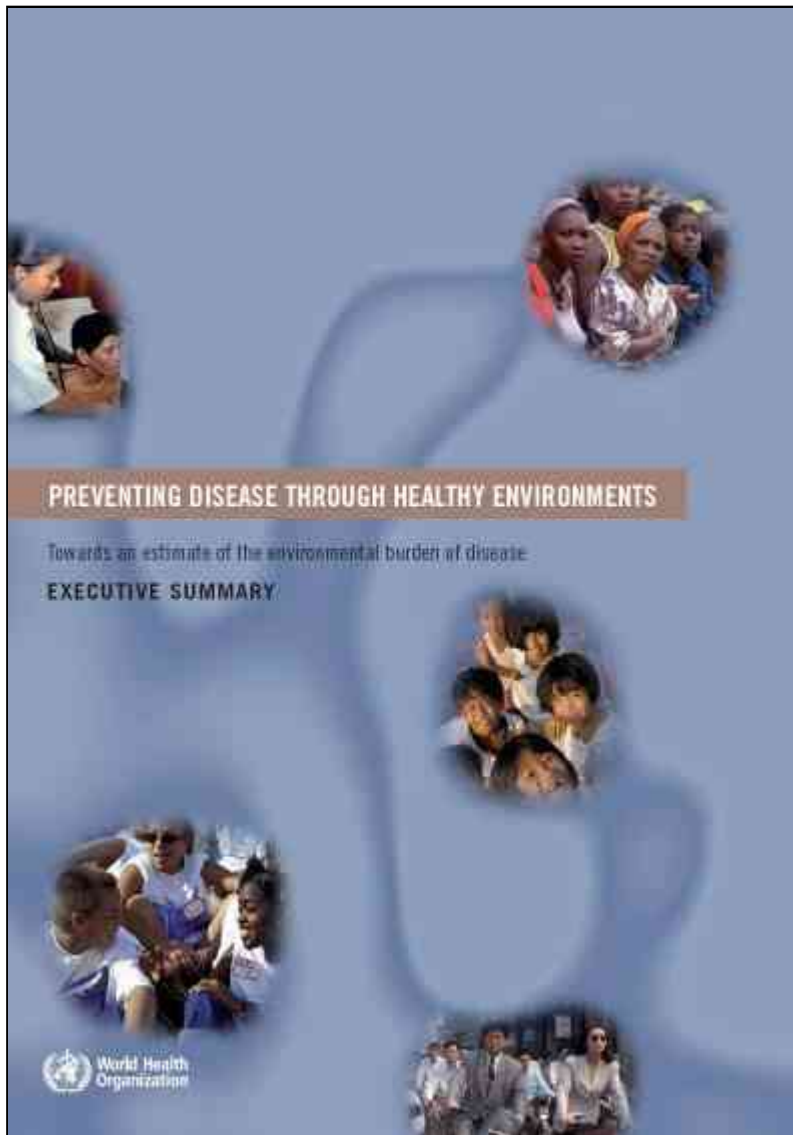
**Diarrhoea**

**ARI**



**Environmental factors**  
**Non-environmental factors**

# Preventing disease through healthy environments



Children in developing countries lose 8-times more *healthy life years* per capita from environmentally-caused diseases.

In very poor regions of the world, the disparity is greater: n° of healthy life years lost due to lower respiratory infection is 800 times greater per capita

Mental retardation caused by lead in gasoline is 30 times higher in areas where it is used, if compared with areas where it was banned

[www.who.int](http://www.who.int) - health topics - environment

# WHO's activities

- Awareness raising
- Training
- Collaborative research promotion
- Proactive partnerships
- Children's Environmental Health Indicators - CEHI
- Burden of disease
- Settings approach
- Climate change

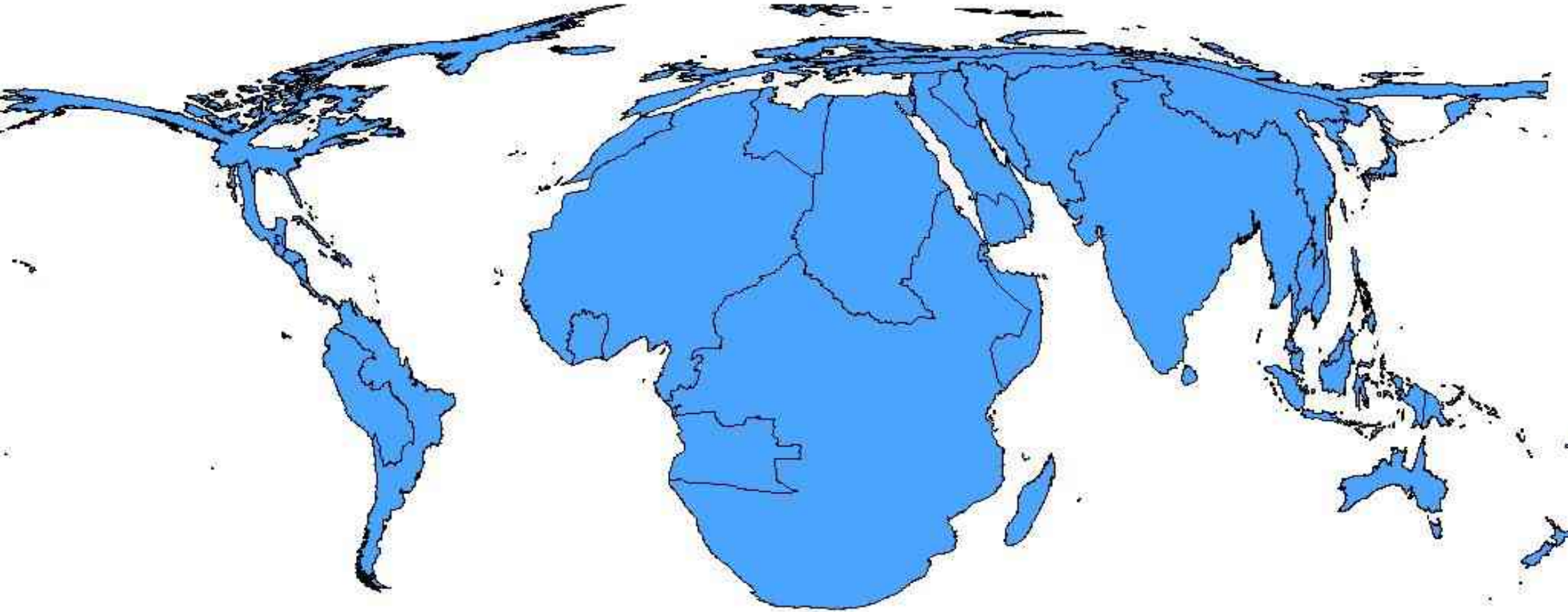


# WHO considers climate change as an important threat to health

- **Assessments suggest that the most effective response to ongoing climate change will be through:**
  - **Strengthening existing core public health interventions**
  - **Protecting health from the climate change that we are already committed to**
  - **Supporting "new" interventions for specific risks**
  - **Encouraging behaviours that are good for health and the environment**

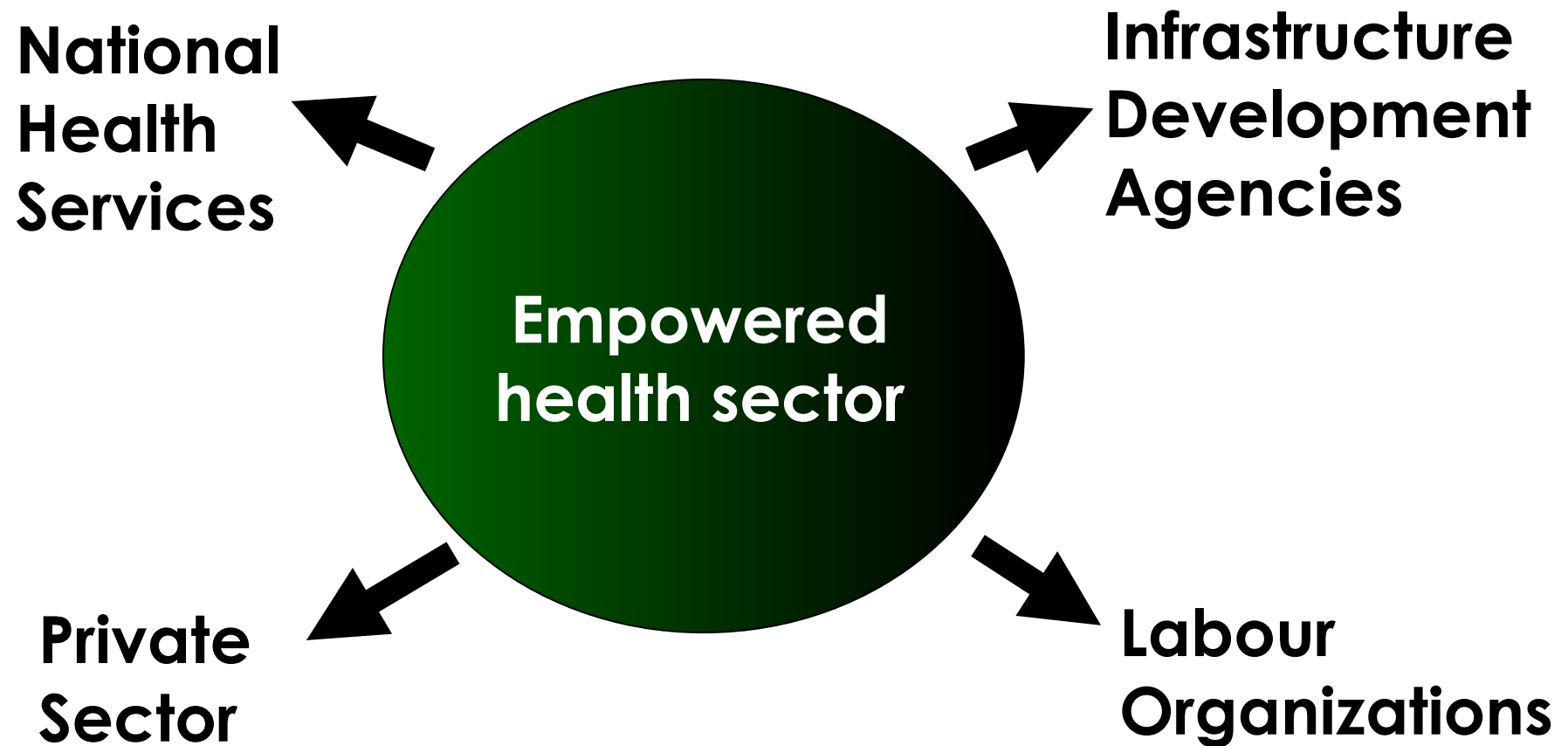


# Health impacts of climate change



Density equalling cartogram. WHO regions scaled according to estimated mortality (per million people) in the year 2000, attributable to the climate change that occurred from 1970s to 2000. Gibbs et al, in prep.

# Health sector can leverage action for sustainable development



# More knowledge is needed

- **Special vulnerability of child/fetus & timing of exposure**
- **Rapidly changing environments – new toxicants, new effects**
- **Effects of global climate change**
- **High economic and social costs of E-related diseases**
- ***PREVENTABLE!***



# Action is required NOW

**Both the health sector and the non-health sector actors can, and should take joint action to address environmentally - mediated causes of disease**

**What can be done?**



# What are the risk factors associated with the main causes of disease burden in children?

## Disease

Diarrhoeal diseases

Respiratory infections

Unintentional injuries

Mild mental retardation

## Risk factors

Unsafe water

Unsafe sanitation

Hygiene

Indoor air pollution from SFU

Second hand tobacco smoke (SHS)

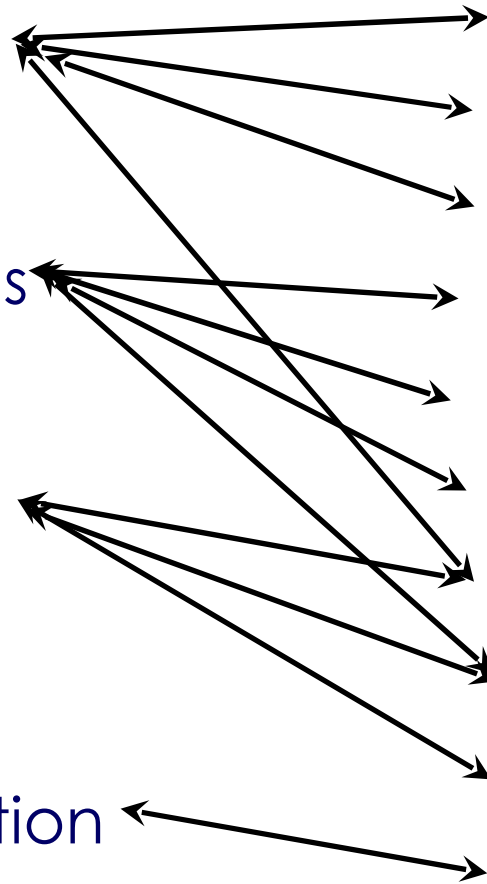
Outdoor air pollution

Climate change

Unsafe housing

Urban & land planning

Lead exposure



# Which interventions are possible to address the selected risk factors?

## Risk factors

Unsafe water  
Unsafe sanitation  
Hygiene  
Indoor air pollution from SFU  
Second hand tobacco smoke  
Outdoor air pollution  
Climate change  
Unsafe housing  
Urban & land planning  
Lead exposure

## Interventions

Household level?  
  
Community level?  
  
Local level?  
  
National level?



# Main environmental interventions for preventing diarrhoeal diseases

## Risk factors

## Interventions

Water supply

Improve water supply: household connections, public standpipe, etc

Unsafe sanitation

Improve sanitation through improved excreta disposal by latrines or sewage

Hygiene

Improve hygiene practices: raising awareness of hand washing, provide hand-washing facilities

Water quality

Improve recreational water quality and manage recreational environments

Wastewater

Eliminate or reduce mixing industrial and domestic wastewater for agricultural purposes



# Main environmental interventions for preventing respiratory infections

## Risk factors

## Interventions

Indoor air pollution from SFU

Use cleaner fuels (gas, electricity, etc)  
Improve cooking or heating devices  
Improve ventilation  
Reduce exposure by keeping children away from smoke

Second hand smoke

Raise awareness of the benefits of smoke-free environments for children  
Extend legislation to ban smoking in places children frequent

Outdoor air pollution

Reduce exposure by traffic management & land use  
Reduce emissions of PM at vehicle level by introducing taxes, maintain vehicle inspection programmes, use cleaner fuels and innovative technologies

Unsafe housing

Avoid chilling/crowding  
Reduce dampness in the house by improving ventilation for specific rooms

# Interventions for unintentional injuries

## Type of injury

## Interventions

Road traffic injuries

Design of road and road environment; Traffic calming measures; Road maintenance; Pedestrian and cycling infrastructure

Poisoning

Safe handling and storage of chemicals and medicines; Education of children about the dangers of products

Falls

Improve housing environment by installing window guards, slippery surface, etc; Design of urban environment (walking paths, etc)

Burns

Related to SFU: safer cooking/heating devices, kitchen design, etc



# The environment is a platform for good health that we all share in common

***“International collaboration and innovative partnerships offer major opportunities for translating knowledge into prevention and education, and for promoting healthier and safer environments for children”***

***[www.who.int/ceh](http://www.who.int/ceh)***

