

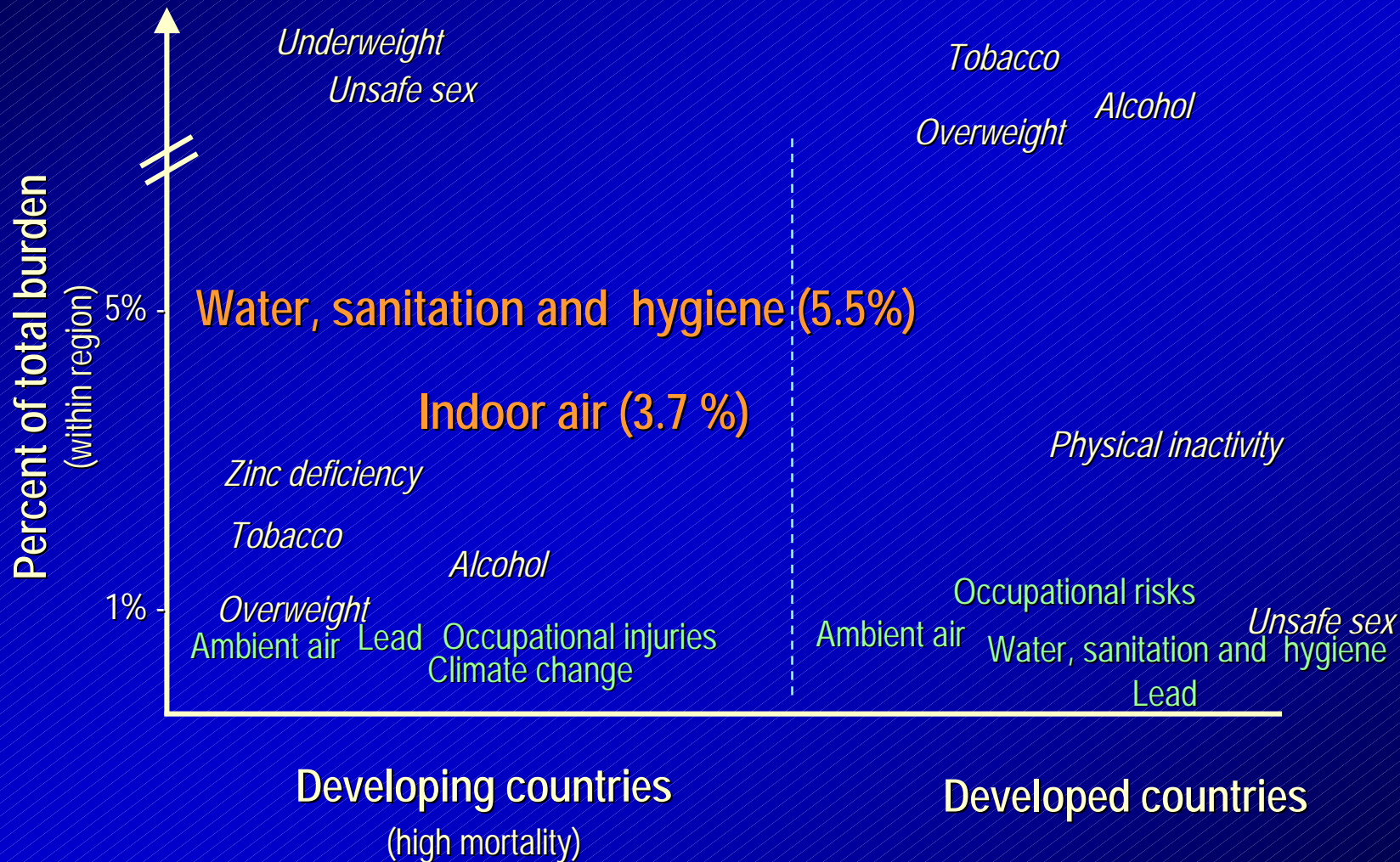
Water & Sanitation and Household Energy - Two Critical Determinants of Children's Health

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"Healthy Environments for Children"
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Global burden of disease attributable to selected major risk factors



Access to water supply and sanitation

- 2.4 billion people lack access to basic sanitation
- 1.1 billion people lack access to improved drinking water sources
- 3.4 million people, mostly children, die annually from water-related diseases



Access to safe water supply and sanitation is fundamental for better health, poverty alleviation and development.

Selected water-related diseases



Diarrhoea:

- 2.1 million people, mostly children, die of diarrhoea every year
- Interventions reduce incidence by 26% and mortality by 65%

Malaria:

- 1 million people, mostly children, die of malaria every year
- Better management of water resources reduces transmission

Schistosomiasis:

- 200 million are infected, 20 million suffer severe consequences
- Basic sanitation reduces the diseases by up to 77%

The bigger picture

- Inadequate water supply
- Unsafe water resources
- Lack of basic sanitation
- Inequitable access

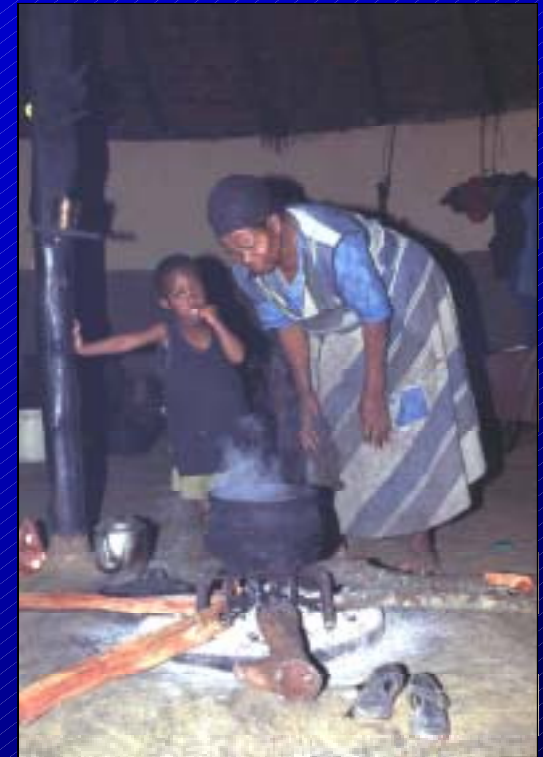
- Time burden and lost educational opportunities
- Financial cost
- Disease burden
- Health care costs

POVERTY



Household energy, indoor air pollution and health

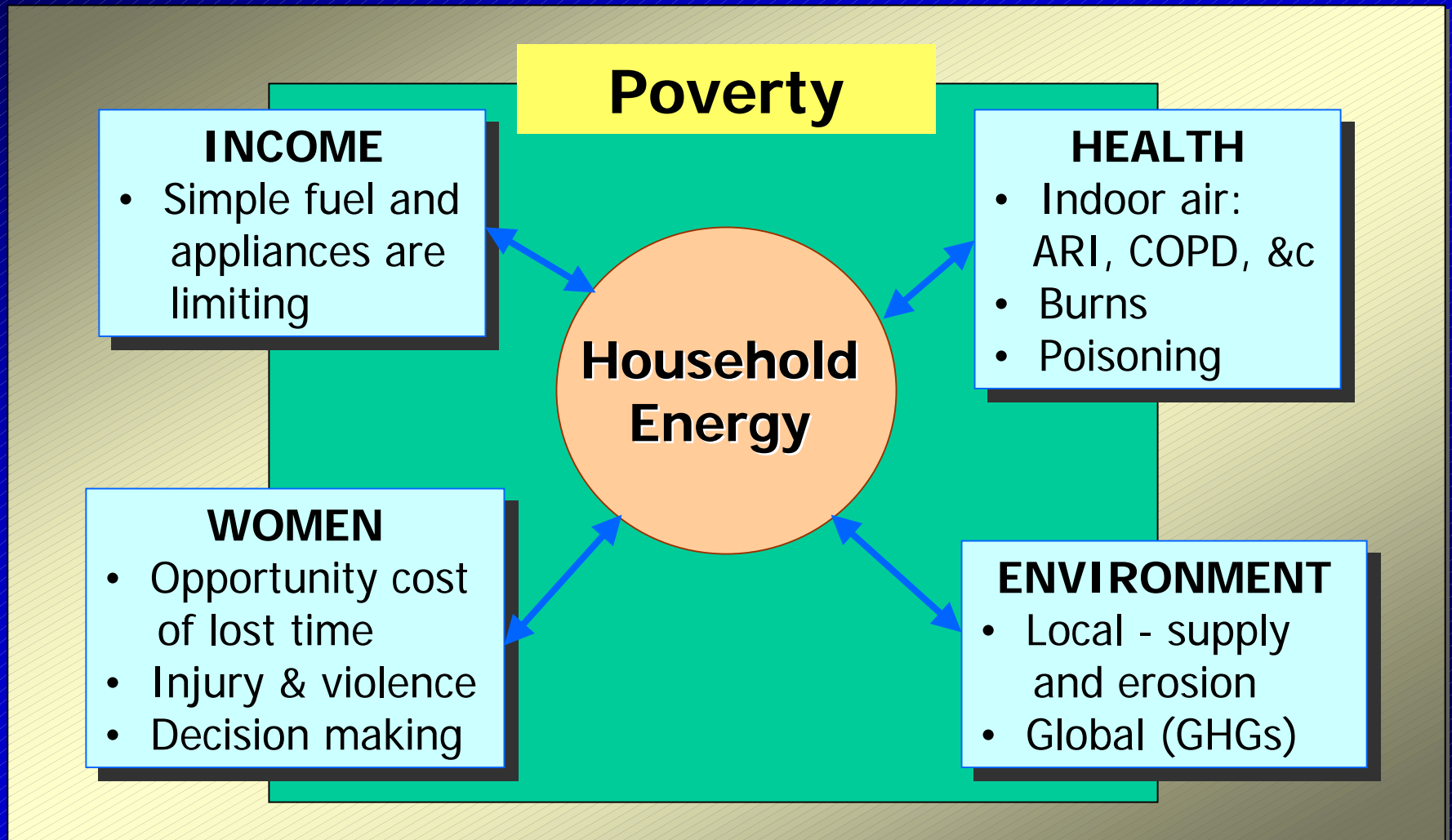
- Some 3 billion people rely on solid fuels (e.g. dung, wood, agricultural residues, charcoal, coal) for their basic energy needs.
- Cooking and heating with solid fuels leads to high levels of indoor air pollution (IAP), a complex mix of health-damaging pollutants (e.g. PM, CO).
- Women and young children, who spend most time at home, experience the largest exposures and health burdens.



Indoor air pollution and health – status of evidence

Health outcome	Evidence
<ul style="list-style-type: none">• ALRI (children <5yr)• COPD (adults)• Lung cancer (coal)	Between 10 - 20 studies Few measured exposure Confounding problematic
<ul style="list-style-type: none">• Tuberculosis• Cataract• Upper airway cancer• Asthma	Several consistent studies (more conflicting for asthma)
<ul style="list-style-type: none">• Low birth weight• Perinatal mortality• Otitis media	Very few studies, support from ETS and/or ambient air pollution studies
<ul style="list-style-type: none">• Cardiovascular disease	No studies, but suggestive

Health, environment and development impacts of household energy use



What interventions are available?

ENERGY

Source of pollution	Home environment	User behaviour
<ul style="list-style-type: none">• Improved stoves• Cleaner fuels (kerosene, gas, electricity)	<ul style="list-style-type: none">• Hoods and chimneys• Windows, ventilation holes, eaves spaces• Separate kitchen	<ul style="list-style-type: none">• Fuel drying• Use of pot lids• Good maintenance• Keeping children away from smoke

WATER

Source of pollution	Home environment	User behaviour
<ul style="list-style-type: none">• Improved drinking water source• Improved sanitation facilities• Water resources management	<ul style="list-style-type: none">• Household water treatment• Safe water storage vessel• Privacy of sanitation facilities	<ul style="list-style-type: none">• Hand-washing

Conclusions and outlook

- In developing countries, water & sanitation and solid fuel use are responsible for
 - > more than 9% of the burden of disease
 - > more than 1.6 million deaths in children under five
- Effective and cost-effective interventions are available.
- Improving people's access to safe water, adequate sanitation and clean energy sources contributes to achieving the Millennium Development Goals, in particular Goal 9 *To Ensure Environmental Sustainability* and Goal 4 *To Reduce Child Mortality*.