



WORLD HEALTH  
ORGANIZATION

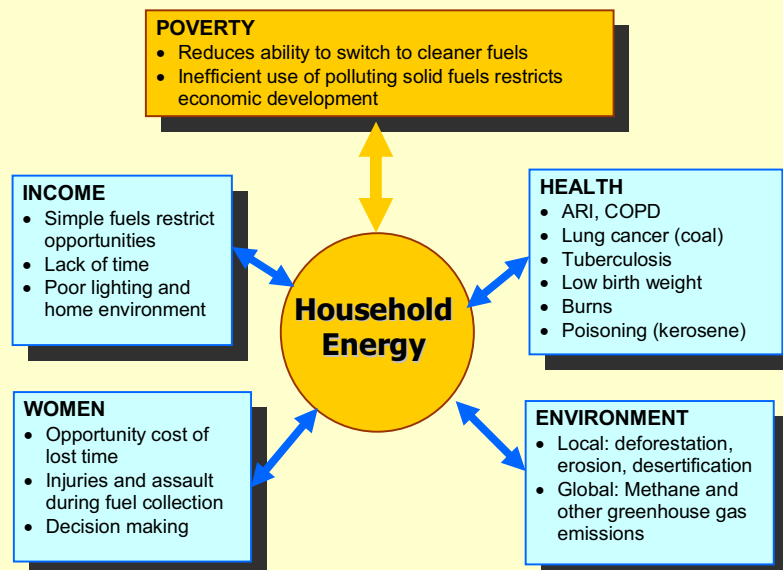
# Indoor Air Pollution, Household Energy and the Millennium Development Goals

## INDOOR AIR THEMATIC BRIEFING 1

Worldwide, around three billion people continue to depend on solid fuels, including biomass fuels (wood, dung, agricultural residues) and coal, to be able to meet their most basic energy needs. Cooking and heating with solid fuels on open fires or traditional stoves results in high levels of indoor air pollution. Indoor air pollution comprises a range of health-damaging pollutants, such as small particles and carbon monoxide, and is responsible for up to 1.6 million deaths every year, most of them due to acute respiratory infections (ARI) in children under five. In high-mortality developing countries, this neglected health risk is to blame for 3.7% of all deaths, making it the most lethal killer after malnutrition, unsafe sex and lack of safe water and adequate sanitation.

Energy underlies all economic activity and thus represents a prerequisite for economic development. With respect to household energy, dependence on polluting and inefficient fuels and appliances is both a cause and a result of poverty: Poor households often do not have the resources to obtain cleaner, more efficient fuels and appliances. Conversely, reliance on simple household fuels and appliances limits opportunities for economic development, continuing a vicious cycle of poverty and reliance on polluting, inefficient fuels (see diagram below).

### *The central role of household energy*



### Multiple links between household energy and the Millennium Development Goals

In September 2000, the largest-ever gathering of Heads of State committed themselves in the Millennium Development Declaration to making the right to development a reality for everyone. The objective of this declaration is to promote a "comprehensive approach and a coordinated strategy, tackling many problems simultaneously across a broad front". To help track progress a set of eight time-bound and measurable goals for combating poverty, hunger, disease, illiteracy, environmental degradation and discrimination against women were defined.

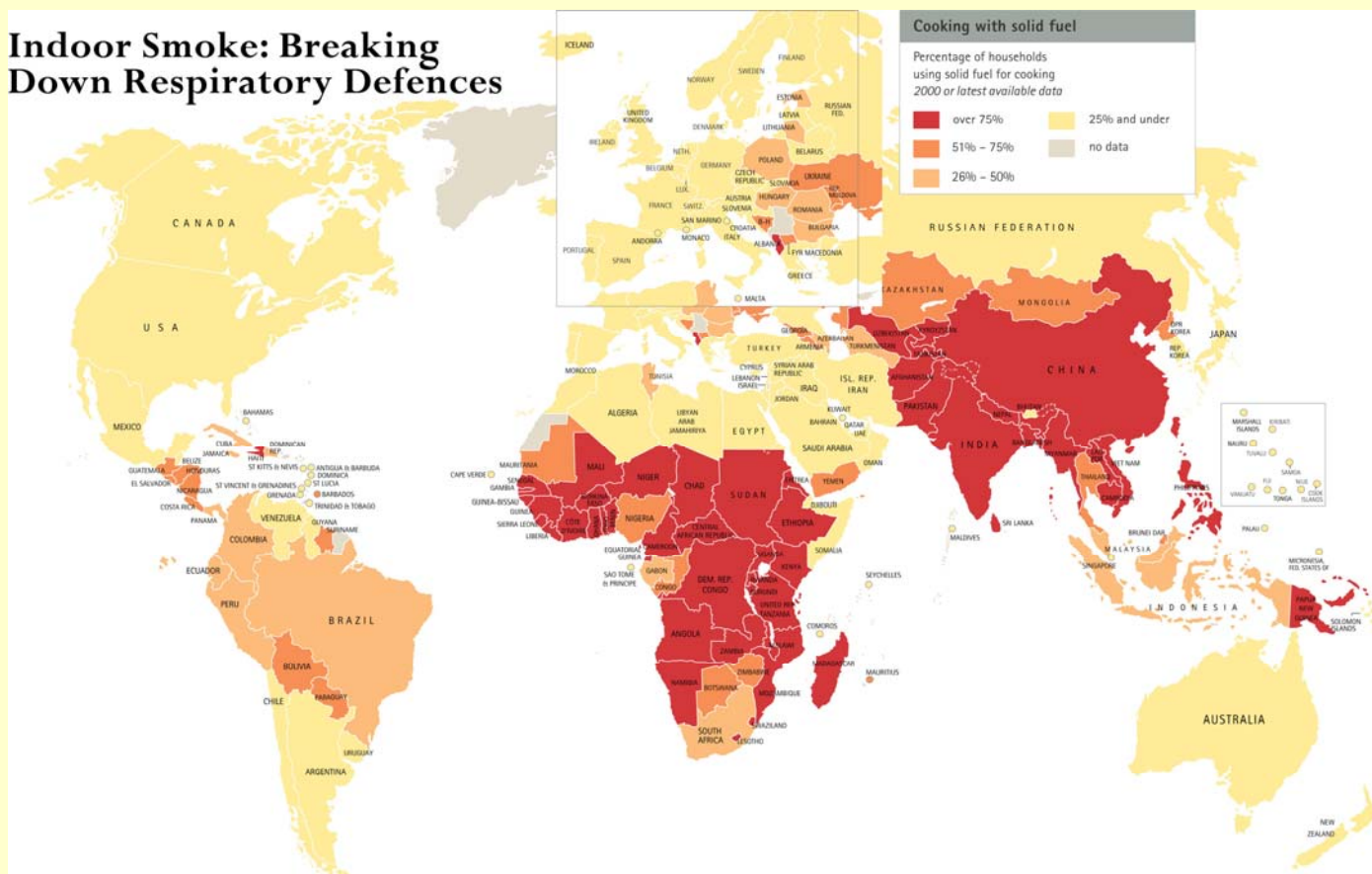
Household energy is inextricably linked to many of these overarching goals, and improvements in access to cleaner energy and cleaner energy practices can make multiple contributions to achieving them (see table).

Millennium Development Goals	Contribution of improved household energy practices
<b>Goal 1: Eradicate extreme poverty and hunger</b>	<ul style="list-style-type: none"> <li>• The security of household livelihoods rests on the health of its members. Being ill or having to care for sick children reduces earning capacities and leads to additional expenses for health care and medication.</li> <li>• Where fuels are bought, spending money on large quantities of inefficient fuels places additional constraints on scarce household budgets.</li> <li>• Improved household energy practices provide opportunities for income generation and the development of small enterprises: improved stoves that use less fuel facilitate more efficient food preparation; electricity access ensures a source of light for economic activities in the evening and a source of energy for operating a sewing-machine or refrigerator.</li> </ul>
<b>Goal 2: Achieve universal primary education</b>	<ul style="list-style-type: none"> <li>• With less time spent on fuel collection and lost due to ill health, children will have more time available for school attendance and homework.</li> <li>• Better lighting allows children to study outside of daylight hours and without putting their eyesight at risk.</li> </ul>
<b>Goal 3: Promote gender equality and empower women</b>	<ul style="list-style-type: none"> <li>• Where fuels are collected, this imposes a serious time burden on women. Alleviating this drudgery and reducing cooking time through more efficient devices will free women's time for productive endeavours, adult education and child care.</li> <li>• Eliminating the dependency on fuel collection far from home will reduce the risk of assault and injury for women and girls.</li> <li>• Involving women in household energy decisions contributes to promoting gender equality and empowering women. Owning a less-polluting stove raises a woman's prestige - both as a sign of wealth and, indirectly, through a soot-free kitchen environment.</li> </ul>
<b>Goal 4: Reduce child mortality</b>	<ul style="list-style-type: none"> <li>• Every year, indoor air pollution is responsible for nearly one million deaths in children under five years of age. Reducing exposure to indoor air pollution will make a significant contribution to reducing child morbidity and mortality.</li> <li>• Exposure of the developing embryo to indoor air pollution may contribute to perinatal mortality and low birth weight, a major risk factor for a variety of diseases during childhood.</li> <li>• Kitchen fires and kerosene wick lamps are a major cause of burns for infants and toddlers.</li> </ul>
<b>Goal 5: Improve maternal health</b>	<ul style="list-style-type: none"> <li>• Women, who are usually in charge of cooking, are most at risk of chronic respiratory problems, such as chronic obstructive pulmonary disease (COPD). Cutting down indoor air pollution will contribute to better respiratory health, in particular among young mothers spending time close to the fire after having given birth.</li> <li>• Carrying heavy loads is linked with an increased risk of prolapse. A more accessible source of fuel will reduce labour burdens and associated health risks.</li> </ul>
<b>Goal 6: Combat HIV/AIDS, malaria and other diseases</b>	<ul style="list-style-type: none"> <li>• Several studies show that exposure to indoor air pollution increases the risk of tuberculosis. With approximately 1.6 million deaths every year, tuberculosis is one of the leading global causes of death.</li> </ul>
<b>Goal 7: Ensure environmental sustainability</b>	<ul style="list-style-type: none"> <li>• The reliance on fuelwood can put considerable pressure on forests, particularly in areas where biomass is scarce and the demand for wood outweighs natural re-growth. Depending on the environmental context, deforestation is a driving force for land degradation and desertification.</li> <li>• Traditional stoves typically have a low efficiency. As a result, a large percentage of the fuel energy is lost as products of incomplete combustion. These include the gas methane which has a greenhouse effect many times greater than CO<sub>2</sub>. Environmentally sound technologies, such as energy-efficient devices based on renewable sources, can substantially reduce harmful impacts on the environment and human health.</li> <li>• The proportion of the population relying on solid fuels (see map) constitutes one of the indicators to monitor progress towards Target 9, which aims to integrate the principles of sustainable development into country policies and programmes and to reverse the loss of environmental resources.</li> </ul>
<b>Goal 8: Develop a global partnership for development</b>	<ul style="list-style-type: none"> <li>• Development agendas and partnerships must recognize the fundamental role that clean household energy practices play in economic and social development.</li> </ul>

## Eradicating extreme poverty

One of the targets established to measure progress in achieving Millennium Development Goal 1 is halving the proportion of the world's people living on less than \$1 a day by 2015. Based on the strong link between income and access to energy services - whether at the global level or national level - the International Energy Agency (IEA) predicts that this goal can only be achieved if "governments act decisively to accelerate the transition to modern fuels and to break the vicious cycle of energy poverty and human underdevelopment in the world's poorest countries".

### Indoor Smoke: Breaking Down Respiratory Defences



In particular, the poverty-reduction target can only be met if the number of people relying almost entirely on traditional biomass for cooking and heating is reduced to less than 1.85 billion. Yet, according to the IEA's reference scenario, this number will increase from 2.40 billion in 2002 to 2.55 billion in 2015 and, even further, to 2.63 billion in 2030. Therefore, to accomplish the poverty-reduction target in the light of population growth, governments will need to extend the use of modern cooking and heating fuels to an additional 700 million people by 2015. Responding to this need will require a concerted effort from stakeholders in different sectors at the local, national and international level.

### Reporting the Millennium Development Goal indicator on solid fuel use

WHO is the agency responsible for reporting the "proportion of the population using solid fuels for cooking" (see map) as an indicator for reporting progress towards Millennium Development Goal 7 to ensure environmental sustainability. While this indicator is used for assessing progress towards the integration of the principles of sustainable development into country policies and programmes and reversing the loss of environmental resources, the multiple links with all the other Goals must be made more explicit.

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