

Poverty alleviation and access to sustainable energy services

Energy underlies all economic activity and thus represents a prerequisite for 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 and technologies. Access to sustainable energy services in household is very closely related to not only possibilities of income generating activities or education. Energy consumption in households in developing countries today is one of the most deadly activities.

According to WHO¹ indoor air pollution – generated largely by inefficient and poorly ventilated stoves burning biomass fuels such as wood, crop waste and dung, or coal – is responsible for the deaths of an estimated 1.6 million people annually - that's one death every 20 seconds. In developing countries with high mortality rates overall, indoor air pollution ranks fourth in terms of the risk factors that contribute to disease and death. In most societies, women are in charge of cooking and - depending on the demands of the local cuisine - they spend between three and seven hours per day near the stove, preparing food. 59% of all indoor air pollution-attributable deaths thus fall on females. Young children are often carried on their mother's back or kept close to the warm hearth. Consequently, infants spend many hours breathing indoor smoke during their first year of life when their developing airways make them particularly vulnerable to hazardous pollutants. As a result, 56% of all indoor air pollution-attributable deaths occur in children under five years of age.

Measures to reduce indoor air pollution and associated health effects range from switching to cleaner alternatives, such as gas, electricity or solar energy, to improved stoves or hoods that vent health-damaging pollutants to the outside, to behavioural changes.

In addition to the health burden, fuel collection can impose a serious time burden on women and children. Alleviating or reducing this work will free women's time for productive endeavours and child care, and can boost children's school attendance and time for homework.

Another important energy service with a strong link to development and poverty reduction is access to lighting for households in developing countries. According to the World Bank² roughly 1.7 billion people worldwide live without electricity. The lack is most acute in Sub-Saharan Africa, where over 500 million people have no modern energy, and as low as only two percent of those living in rural areas have access to any electricity.

Access to light by sustainable energy services will improve the lives and livelihoods of the target population by potentially extending the work day, thus expanding production, enriching income opportunities, and improving working conditions. Another benefit of the initiative is enhanced safety and security via outdoor lighting for personal, business, and community activities. Increased access for poor households will create conditions to expand time for student reading and studying, and improve grades and school retention rates. Meanwhile, it will also create opportunities for adult literacy and higher education programs.

¹ <http://www.who.int/mediacentre/factsheets/fs292/en/>

² <http://web.worldbank.org>

Tackling indoor air pollution in the context of household energy and improved household energy practices in general is linked to achieving the Millennium Development Goals, in particular to reducing child mortality (Goal 4), to promoting gender equality and empowering women (Goal 3), to opening up opportunities for income generation and eradicating extreme poverty (Goal 1), and to ensuring environmental sustainability (Goal 7). Increase access to lighting will particular contributes to achieve universal primary education (Goal 2).

It is clear that projects and interventions promoting households access to sustainable energy services will contribute to our overall mission of poverty reduction. More details on how improved household energy practices contribute to the Millennium Development Goals is shown in the table below.

Table 1. Improved household energy practices and the MDG³

Millennium Development Goals	Contribution of improved household energy practices
Goal 1: Eradicate extreme poverty and hunger	<ul style="list-style-type: none"> • 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.
	<ul style="list-style-type: none"> • Where fuels are bought, spending money on large quantities of inefficient fuels places additional constraints on scarce household budgets.
	<ul style="list-style-type: none"> • 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.
Goal 2: Achieve universal primary education	<ul style="list-style-type: none"> • With less time spent on fuel collection and lost due to ill health, children will have more time available for school attendance and homework.
	<ul style="list-style-type: none"> • Better lighting allows children to study outside of daylight hours and without putting their eyesight at risk.
Goal 3: Promote gender equality and empower women	<ul style="list-style-type: none"> • 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. • Reducing indoor pollution addresses inequality in women's higher mortality rate. • Improved lighting (e.g., portable lamps) improves mobility and personal safety of women who are at risk moving about in the dark.
	<ul style="list-style-type: none"> • Eliminating the dependency on fuel collection far from home will reduce the risk of assault and injury for women and girls.

³ <http://www.who.int/indoorair/mdg/energymdg/en/>

	<ul style="list-style-type: none"> 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.
Goal 4: Reduce child mortality	<ul style="list-style-type: none"> 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.
	<ul style="list-style-type: none"> 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.
	<ul style="list-style-type: none"> Kitchen fires and kerosene wick lamps are a major cause of burns for infants and toddlers.
Goal 5: Improve maternal health	<ul style="list-style-type: none"> 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.
	<ul style="list-style-type: none"> 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.
Goal 6: Combat HIV/AIDS, malaria and other diseases	<ul style="list-style-type: none"> 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.
Goal 7: Ensure environmental sustainability	<ul style="list-style-type: none"> 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.
	<ul style="list-style-type: none"> 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 CO₂. Environmentally sound technologies, such as energy-efficient devices based on renewable sources, can substantially reduce harmful impacts on the environment and human health.
Goal 8: Develop a global partnership for development	<ul style="list-style-type: none"> Development agendas and partnerships must recognize the fundamental role that clean household energy practices play in economic and social development.

Links and other information

UNDP site on sustainable energy: <http://www.undp.org/energy/>

UNDP site on Energy and MDG: <http://www.undp.org/energy/engmdgtop.htm>

Report on the role of Energy in reducing poverty from UNDP

Energizing the Millennium Development Goals: A Guide to Energy's Role in Reducing Poverty

The new guide aims to help development practitioners understand the role of energy services in reaching the Millennium Development Goals (MDGs). With Q&A explanations and case examples, it offers an overview of pertinent issues and suggests how to address energy within broader efforts to attain the MDGs.

<http://www.energyandenvironment.undp.org/undp/index.cfm?module=Library&page=Document&DocumentID=5491>

or

<http://www.energyandenvironment.undp.org/undp/indexAction.cfm?module=Library&action=GetFile&DocumentAttachmentID=1405>