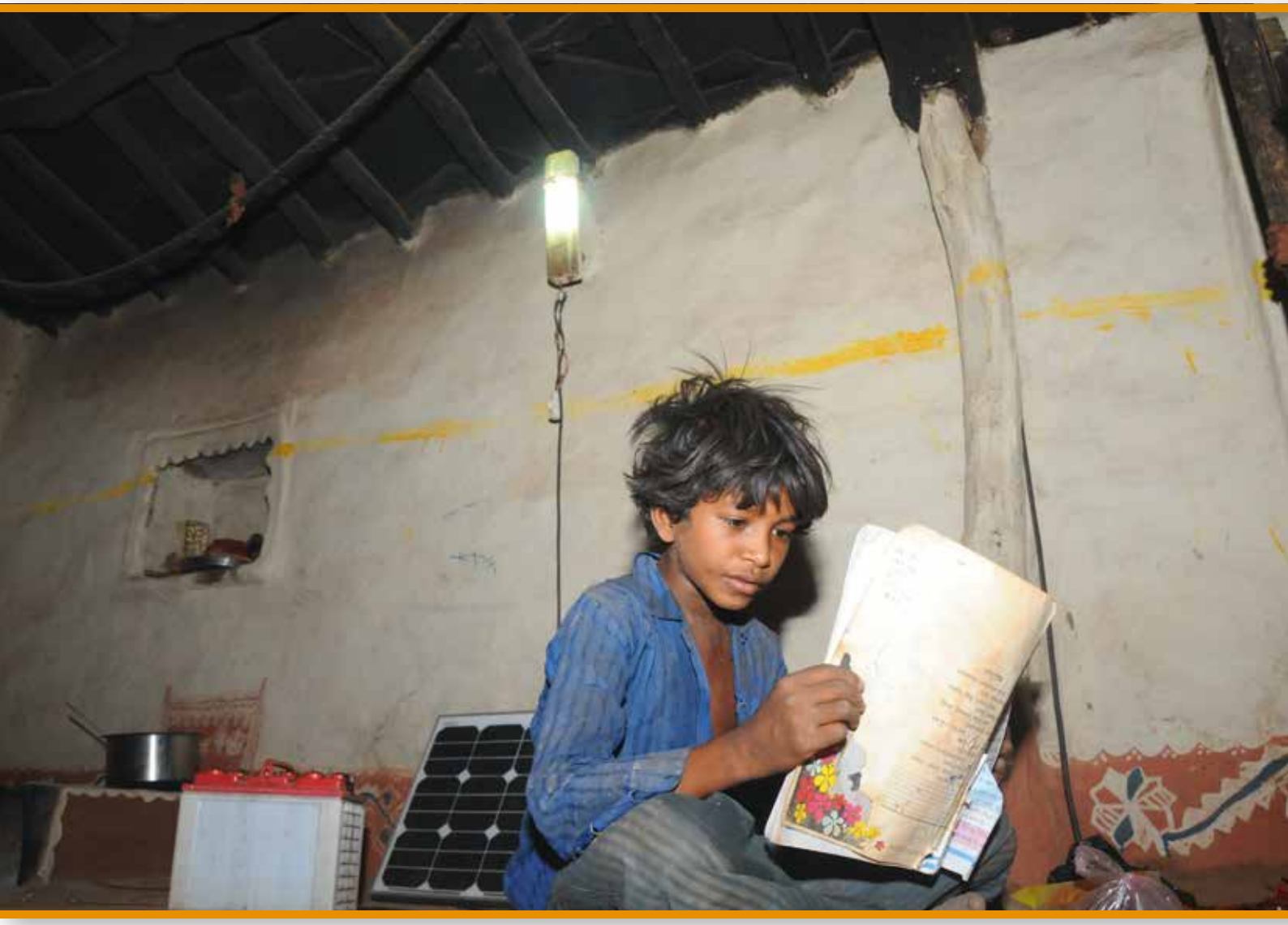
SOCIAL DETERMINANTS OF HEALTH SECTORAL BRIEFING SERIES 5



ENERGY: SHARED INTERESTS IN SUSTAINABLE DEVELOPMENT AND ENERGY SERVICES

World Health Organization

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The authors are Daniel Albrecht and Subhes Bhattacharyya. The series editors are Nicole Valentine, Daniel Albrecht and Anjana Bhushan.
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PREFACE

Public health is built on effective interventions in two broad domains: the biomedical domain that addresses diseases, and the social, economic and political domain that addresses the structural determinants of health. Effective health policy needs to address both domains. However, less rigorous and systematic attention has been paid to health issues in social, economic and political domains in recent decades.

Increasingly complex social, economic and political factors are affecting health and health policy-making. One area of complexity relates to health inequities. As emphasized by the WHO Commission on Social Determinants of Health (CSDH), the social gradient in health is driven by policies in other sectors. Hence, looking at population well-being from the perspective of health and health equity rather than disease demands a new approach to intersectoral collaboration and an imperative to participate earlier in policy processes. Some of the new responsibilities for public health include:

- understanding the political agendas and administrative imperatives of other sectors;
- creating regular platforms for dialogue and problem solving with other sectors;
- working with other arms of government to achieve their goals and, in so doing, advancing health and well-being[1].

By providing information on other sectors' agendas and policy approaches, and their health impacts, and by illustrating areas for potential collaboration, the *Social Determinants of Health Sectoral Briefing Series* aims to encourage more systematic dialogue and problem solving, and more collaboration with other areas of government.

Examples of intersectoral action for health – current and historical – reveal that health practitioners are frequently perceived as ignoring other sectors' goals and challenges. This creates barriers to intersectoral work, limiting its sustainability and expansion. In order to avoid this perception, instead of starting from the goals of the health system (e.g. health, health equity, responsiveness, fairness in financial contributions), the *Social Determinants of Health Sectoral Briefing Series* focuses on the goals of other sectors. Rather than concentrating on traditional public health interventions (e.g. treatment, prevention, protection), the series use the goals of other sectors to orient its analyses and explore areas of mutual interest.

The target audience for the series is public health officers, who are not experts on determinants of health, but who have responsibilities for dealing with a broad range of development issues and partners. Each briefing will focus on a specific policy area, summarizing and synthesizing knowledge from key informants in health and other areas, as well as from the literature. They will present arguments, and highlight evidence of impacts and interventions, with special emphasis on health equity. They will make the case to health authorities for more proactive and systematic engagement with other sectors to ensure more responsive and cohesive governments that will meet broader societal aspirations for health, equity and human development.

Dr. Rüdiger Krech
Director
Department of Ethics and Social Determinants of Health
World Health Organization

1 WHO & Government of South Australia (2010). *Adelaide Statement on Health in All Policies*. Adelaide.

THE ENERGY SECTOR: AN OVERVIEW

Mutually reinforcing interests

Energy is a resource that connects economic growth, social equity and sustainable environment. Development is not possible without sustainable energy (UN, 2012). It plays a critical role in society, affecting the economy, international trade, national security, and the human and physical environment. Energy policy is a basic condition for economic and industrial development; it is equally critical for health. However, we are living in a world where millions of people still live without a reliable source of energy in spite of modern technology. Ensuring universal and sustainable access to modern energy sources for all is therefore another development imperative that plays a crucial role in effectively reducing poverty and providing health for all. If no improvements are made to provide access to energy services, the Millennium Development Goals (MDGs) will not be met (Modi et al., 2005).

Although the MDGs do not refer to energy, without access to energy, it is not possible to achieve them, whether reducing poverty, improving women and children's health, or providing education for all. Energy facilitates social and economic development, and improves living conditions. The link between energy services and poverty reduction was explicitly identified by the World Summit on Sustainable Development (WSSD) in the Johannesburg Plan of Implementation (Modi et al., 2005). The plan called for the improvement of access to energy services in order to facilitate the achievement of the MDGs, including the goal of halving the proportion of people in poverty by 2015. In 2011, recognizing the urgent need for sustainable access to energy, the United Nations Secretary-General launched an initiative on Sustainable Energy for All. In 2012, it further developed an Action Agenda for the Rio+20 Conference on Sustainable Development in order to achieve this initiative (UN, 2012). The initiative's three objectives are listed below.

1. Ensure universal access to modern energy services.
2. Double the global rate of improvement in energy efficiency.
3. Double the share of renewable energy in the global energy mix.

Access to energy allows people to have vital health determinants in the household such as heating and the means to prepare nutritious food. Energy provides the resources necessary to generate income from small-scale family businesses and other activities. At the community level, energy ensures access to clean water, and health and education services. It provides low-cost transport facilitating access to employment. Energy also enables people to access information and communication technologies. Without access to energy, children cannot study at night and are exposed to an elevated risk of fire from overturned kerosene lamps commonly used for lighting. Without access to energy, rural households have to collect wood, degrading forests and natural habitats, and further limiting their resources. Cooking on open fires or on inefficient stoves results in increased levels of indoor air pollution – predominantly in poorer households – which kills around 2 million people each year. Energy policies also affect health indirectly, for example, when increasing the cost of health services and schooling and limiting other basic social services.

For the energy sector, the health of populations is also important because healthier populations can facilitate the rational use energy resources. Better population health is in itself an important outcome of the energy sector's goals to improve social development and people's quality of life. This energy briefing focuses on energy policies and their importance for households and for people's basic need for services.

Scope and limitations

This briefing describes the energy sector – its public policy challenges, how the sectors tries to address these challenges, and areas for potential collaboration between health and energy.

The briefing has been structured to permit public health practitioners with limited time to obtain a well-rounded perspective of the topic by reading only sections 1 and 3. The three sections are:

1. **Energy sector overview.** This covers mutual interests that both sectors share, global trends in energy, and policy challenges from the perspective of the energy sector characterized as 'goals'. These goals are proposed as a result of a review of policy documents and from interviews with energy sector practitioners in order to consider different country contexts and realities.
2. **Goals 1 to 4.** The second part of the briefing analyses each goal, with a detailed description of policy approaches, health impacts, and areas for potential collaboration between sectors.
3. **Summary messages.** Presents key messages with respect to equity, the role for health, and examples of areas for collaboration.

Global trends, projections and patterns in energy for households

Energy for households. Two indicators are mostly used to describe the links between access to energy and poverty. They are access to electricity and reliance on biomass fuels for cooking. Table 1 shows the most recent

information on the world's access to electricity (2009). As we can see, there are more than 1.3 billion people globally with no access to electricity (21% of the global population), most of whom live in rural areas (IEA, 2010). This is caused not only by a lack of energy supply but also by energy prices that are unaffordable for low-income groups (UN, 2012).

Table 1. Electricity access in 2009 – regional aggregates

Region	Population without electricity (million)	Electrification rate (%)	Urban electrification rate (%)	Rural electrification rate (%)
Africa	587	41.8	68.8	25.0
North Africa	2	99.0	99.6	98.4
Sub-Saharan Africa	585	30.5	59.9	14.2
Developing Asia	675	81.0	94.0	73.2
China & East Asia	182*	90.8	96.4	86.4
India and rest of South Asia	493**	68.5	89.5	59.9
Latin America	31	93.2	98.8	73.6
Middle East	21	89.0	98.5	71.8
Developing countries	1314	74.7	90.6	63.2
World***	1317	80.5	93.7	68.0

* China: 8 million; ** India: 410 million; *** World data includes all OECD countries, and Europe and Eurasian countries.
Source: IEA (2011a).

Households often have to rely on coal and biomass (e.g. wood, dung and charcoal) for energy. Table 2 shows the most recent information on the number of people in the world relying on traditional biomass fuels for cooking (in 2010). As the table indicates, there are almost 2.6 billion people using biomass fuels for cooking and heating. This represents around 38% of the global population (IEA, 2012).

Table 2. People relying on traditional use of biomass fuels for cooking in 2010 – regional aggregates

Region	Population relying on traditional use of biomass (million)	Percentage of population relying on traditional use of biomass (%)	Percentage of urban population (%)	Percentage of rural population (%)
Developing countries	2588	48.9	18.7	72.3
Africa	698	68.0	44.0	83.0
North Africa	2.5	2.0	1.0	2.0
Sub-Saharan Africa	695.5	81.0	56.0	95.0
Developing Asia	1814	51.0	17.0	72.0
China & East Asia	716	36.0	12.0	56.0
India and rest of South Asia	1098	69.0	27.0	87.0
Latin America	65	14.0	5.0	50.0
Middle East	10	5.0	1.0	14.0
World	2588	37.8	12.5	63.7

Source: IEA (2012).

Overall, the regions most affected by a lack of access to energy sources are Africa and Asia. In sub-Saharan Africa, around 585 million people have no access to electricity, while almost 700 million people in the same region have to rely on traditional biomass energy for cooking. Asian countries have approximately 675 million people with no access to electricity, while more than 1.8 billion people use biomass for cooking, with pervasive impacts on health and the environment. In India, there are more than 400 million people who do not have access to electricity, while 855 million use biomass fuels. The People's Republic of China has almost achieved universal access to electricity, but 423 million people still depend on biomass fuels for cooking and heating (IEA, 2007). In the long term, analysts predict that if current trends are not scaled up, by 2030, the number of people without access to electricity will only decrease from the current 1.3 billion to around 1.2 billion people. Meanwhile, the number of people relying on biomass is projected to rise from almost 2.5 billion to 2.8 billion by 2030 (IEA, 2011a, 2012).

Environmental challenges. In recent decades, there has been an increasing awareness of the cumulative environmental impact that energy and other public policies are generating. Fossil fuel use is the main cause of climate change due to the release of greenhouse gas (GHG) emissions (McMichael et al., 2007). High fossil-fuel dependence is also associated with environmental degradation. Common gaseous pollutants (e.g. sulphur oxides, nitrogen oxides, carbon monoxides and dioxides) cause a number of effects such as smog, acid rain, ozone depletion and global warming. In 2010, total emissions were 30% higher than in 2000, and 46% higher when compared to 1990. Although emissions of sulphur oxides and nitrogen oxides have declined in most countries in Europe and North America, they have increased in developing countries (UNEP, 2007). New energy extraction and generation techniques are being implemented (including fracking and the use of biomass and geothermal energy production), however their impacts for health and the environment still remain mostly unknown.

Energy and development. Recognizing the challenges related to energy and sustainable development, in 2012, governments adopted the Rio+20 Declaration. This Declaration calls on nations to adopt policies that ensure sources of energy for all future generations. Decision-makers need to follow three policy directions

recent estimates indicate that in 2009, US$ 9.1 billion was invested globally to improve access to electricity and sources of energy for cooking (UN, 2011). This means that to achieve the 2030 goal, five times the amount of investments will be needed.

Energy goals: towards sustainable and universal access

Emerging best practice in energy policy is based on the assumption that access to energy for all is tied to its long-run sustainability, in line with international development agendas. This is because current energy sources are not predicted to last long enough to contribute to poverty reduction. The world's population of 7 billion is likely to increase to 9 billion by 2050. Given the high levels of inequality in the distribution of energy to households, a key challenge for energy policy is how to provide universal access to energy, while reducing the negative environmental impacts. Solutions discussed by energy 'think tanks' include developing models that rely less on energy consumption. In securing energy supplies policy-makers make strategic choices, in particular with respect to energy sources – oil, coal, gas, renewable or nuclear being among the main sources. Health impacts are important considerations, yet they are weighed against other strategic considerations that can include, for example, geopolitical, security or military factors. Taking into consideration these challenges, energy policies often focus on the goals in Table 3.

Scope and limitations. The bulk of the burden of disease and premature mortality arises from the social determinants of health (CSDH, 2008). The social determinants of health are the conditions in which people are born, grow, live, work and age and their structural determinants, such as the distribution of income and resources, discrimination, and political and governance structures, which create or reinforce inequalities in social position. Differences in social position shape living conditions and population health opportunities by limiting the ability of groups and individuals to take action to protect and promote their health, or by limiting the effectiveness of such actions and of health services. For this reason, public policies have profound effects on the health of populations and the social gradient in health. It is therefore important for the health sector to be aware of these effects and opportunities for action.