ACCELERATING SDG 7 ACHIEVEMENT

POLICY BRIEF 02

ACHIEVING UNIVERSAL ACCESS TO CLEAN AND MODERN COOKING FUELS, TECHNOLOGIES AND SERVICES

7 AFFORDABLE AND CLEAN ENERGY

ACCELERATING SDG 7 ACHIEVEMENT

POLICY BRIEFS IN SUPPORT OF THE FIRST SDG 7 REVIEW AT THE UN HIGH-LEVEL POLITICAL FORUM 2018

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POLICY BRIEF #2

ACHIEVING UNIVERSAL ACCESS TO CLEAN AND MODERN COOKING FUELS, TECHNOLOGIES AND SERVICES

Developed by

World Health Organization (WHO), International Energy Agency (IEA), Global Alliance for Clean Cookstoves (GACC), United Nations Development Programme (UNDP), Energising Development (EnDev) and World Bank

KEY MESSAGES

Importance of clean-cooking solutions for achievement of SDG 7

- Universal access to clean and modern cooking fuels and technology is an integral element of ensuring that the broader aims of SDG 7— universal access to modern energy services—are achieved by 2030. Cooking solutions also advance other SDGs, including good health and well-being, gender equality, climate action, and eliminating poverty.
- Despite significant progress on other SDG 7 indicators, access to cooking solutions remains a distant possibility for the 3 billion people—40 per cent of households globally—who still rely on traditional cooking systems daily. An assessment of recent trends and policies indicates that without additional efforts, 2.3 billion people will still be without clean cooking access in 2030. Urgent action is needed to scale up access to modern energy cooking solutions through policies, financing, and technology development, or the world will fall short of SDG 7 and several other related SDGs.

Priority actions

- Enabling Policies: Governments must prioritize clean-cooking solutions, and translate their global commitments into concrete evidence-based policies and plans to increase access to clean and modern cooking energy.
- Financing and Investment: Governments, development agencies, and the private sector must mobilize funds in order to: scale up promising enterprises so they become profitable, increase consumer choice and financing, and stimulate additional private investment (including through incentives or risk mitigation mechanisms).
- Mainstreaming and multi-sectoral action: Successful clean-cooking solutions are inherently cross-sectoral and should engage diverse public and private stakeholders from across the development and climate spectrum, including but not limited to policymakers for energy, health, environment, and education, as well as private sector actors. Moreover, to optimizse clean cooking impacts, policymakers, implementers, funders, and financiers should aim to mainstream clean cooking into relevant development interventions, such as those impacting health, gender, climate, and environment.
- Technology: Moving people towards cleaner and more efficient cooking solutions that meet local cultural, social and gender needs should be prioritized on the path to achieving universal access. Adequate financial and technological resources are needed to help spur innovation and identify a suite of affordable and scalable clean-cooking solutions. For example, high-performing biomass stoves can serve as an important transitional solution until infrastructure for the cleanest options (such as electricity, LPG, ethanol, biogas, and solar) is built.
- Monitoring: Improved monitoring of household energy use, including primary and supplementary cooking fuels and technologies, as well as those used for heating and lighting, must be adopted to accurately track, measure impact, and assess progress towards achieving universal access. Assessment of impacts on health, environment, climate, gender and livelihood is crucial to understanding the full burden of polluting fuels and technology combinations.

Clean-cooking access and the Sustainable Development Goals

Closing the household energy access gap is now a priority on the global sustainable development agenda. Having access to reliable, clean, modern cooking energy enables people to live to their full potential.

Interlinkages with other Sustainable Development Goals

Inefficient cooking contributes to poverty, poor health, gender inequality, environmental degradation, air pollution and climate change. Universal access to clean and modern cooking is integral to reducing poverty and advancing human dignity. The co-benefits of clean cooking can help achieve 10 of the 17 global goals. Moreover, clean cooking is particularly relevant to fulfilling the SDG commitment to "leave no one behind." The harmful consequences of inefficient, traditional cooking disproportionately affect the world's most vulnerable citizens—women, girls, and infants, as well as those living in extreme poverty and displaced populations (WHO, 2016).

In the 2017 SDG Progress Report, Secretary-General Guterres cited household and ambient air pollution as the greatest environmental health threat facing the world today, which cannot be addressed without significant progress on access and adoption of clean and modern cooking. Around 4 million deaths are attributed to traditional cooking methods annually. Exposure to household air pollution (HAP) contributes to a myriad of diseases including acute lower respiratory infections in young children and lung cancer, ischaemic heart disease, chronic obstructive pulmonary disease and stroke in adults. The health and well-being (SDG 3) of women, children, and infants are disproportionately compromised by HAP. Research suggests that the air pollution caused by inefficiently cooking with biomass fuels may increase blood pressure in pregnant women, cause lower birth weight of infants and increase incidence of childhood pneumonia. In addition to these illnesses, polluting and unsafe fuels pose substantial risks for burns and injuries. Fuel collection over long distances with heavy loads can result in personal safety risks and injury as well.

Traditional cooking also poses additional burdens for women and girls, since they typically spend hours each day caring for their families and performing routine, unpaid household chores, such as cooking, cleaning, and collecting water and firewood, time that could otherwise be spent on income-generating activities, education or recreation. Without addressing time poverty that women and girls face, gender equality (SDG 5) cannot be fully achieved.

Furthermore, emissions from traditional cookstoves and fuels also slow progress on environmental and climate-related goals (SDGs 12, 13 and 15), as well as the Paris Agreement. Unsustainable wood harvesting for cooking fuel can contribute to forest degradation, reducing carbon uptake by forests. Additionally, HAP contributes up to 25 per cent of black carbon emissions, one of the most significant climate forcers. Thus, shifting to clean household energy provides an excellent opportunity to realize near-term climate and health co-benefits (WHO, 2016).

Box 2.1.

Defining clean for health: Clean and modern cooking solutions

Improving indoor air quality requires defining "clean" for health at point of use. The most recent WHO *Guidelines for indoor air quality: household fuel combustion* (the Guidelines) set new standards for clean burning in the home based on systematic reviews of scientific literature and robust mathematical models. Any type of fuel-technology combination is considered "clean" if its emissions meet WHO Guidelines. Currently available options that are clean at point of use include electricity, gas, ethanol, solar and the highest performing biomass stoves. In order to provide the greatest health benefit, clean fuels and technologies should be used exclusively.

The Guidelines discourage household use of kerosene and unprocessed coal in the home, owing to significant health risks from these fuels. An improved cookstoves (ICS) typically describes a stove with higher efficiency or lower emissions than a traditional stove, but can include a wide range of performance. For fuels and technologies that are not clean at point of use, personal exposure is affected by an array of factors including time spent indoors, proximity to a cookstove and ventilation. Most ICS models do not meet WHO Guidelines, but offer some benefits and can be used as transitional solutions. Further innovation, research and investment may indeed produce affordable and widely available biomass stoves that meet the WHO Guidelines levels.

Current status of clean cooking fuel and technology access

Worldwide, around 3 billion people lack access to clean and modern fuels and technologies for cooking, meaning that they cook with fuels including fuelwood, charcoal, coal, agricultural residue, dung and kerosene, paired with inefficient stoves. One-third of the global population uses solid biomass as their primary cooking fuel, around 120 million people use kerosene, and 170 million people use coal. Since 2000, the number of people in low- and middle-income countries with access to clean cooking has grown by 60 per cent, but this progress was outstripped by strong population growth, leaving at least 400 million more people without clean cooking today than in 2000 (WHO, 2016 and IEA, 2017). Furthermore, even households that report primary reliance on clean fuels and technologies for

Box 2.2.

Measuring Energy Access with the Multi-Tier Framework

Historically, access to clean energy for cooking was equated with the use of non-solid fuels as the primary cooking energy source (in recent years this has been modified since a non-solid fuel, kerosene, is no longer considered clean). However, this binary metric fails to fully capture the interactions between the cookstove, cooking environment and user's experience. For predicting exposure, it is important to consider the interlinkages between cooking emissions, indoor air quality and health risks. A more comprehensive assessment of energy access could better inform energy policy, planning and project implementation.

Through consultations and inputs from multiple agencies, a new multi-tier framework (MTF) for measuring access to energy for cooking has been developed, which includes six attributes: *cooking exposure, efficient heat, convenience, cookstove safety, affordability and fuel availability*. It provides a comprehensive tool to capture information about access to energy for cooking, encompassing various cooking solutions, user behaviour, cooking conditions and use of multiple cooking solutions, as well as convenience and safety aspects. It allows disaggregate as well as aggregate analysis to yield detailed information about various parameters as well as indices that facilitate comparison over time and across geographic areas.

The MTF data are currently being collected in 16 countries and are expected to be available by early 2019. The efforts are also ongoing to mainstream the data collection in the country statistics systems. The MTF is an opportunity to better measure access to modern energy cooking service and informing policy designs.

cooking may supplement with biomass, coal and kerosene—the well-known reality of "fuel-stacking".

Primary reliance on polluting cooking fuels and technologies varies regionally. The African Region, the South-East Asia Region, and the Western Pacific Region have the highest proportions of households primarily using polluting fuels for cooking. China and India are taking a strong stance on clean cooking through government-led policies. In China, residential biomass use has been declining 6 per cent per year since 2010, largely replaced by natural gas, LPG and electricity, especially in urban areas. (IEA, 2017) In India, though the number of people without clean cooking access has leveled off at around 780 million since 2010 and the Government is further ramping up efforts to provide clean cooking energy access through its *Pradhan Mantri Ujjwala Yojana Programme* (PMUY). The PMUY scheme has target of providing free LPG connections to 50 million women living below the poverty line by 2019 (PMUY, 2018).

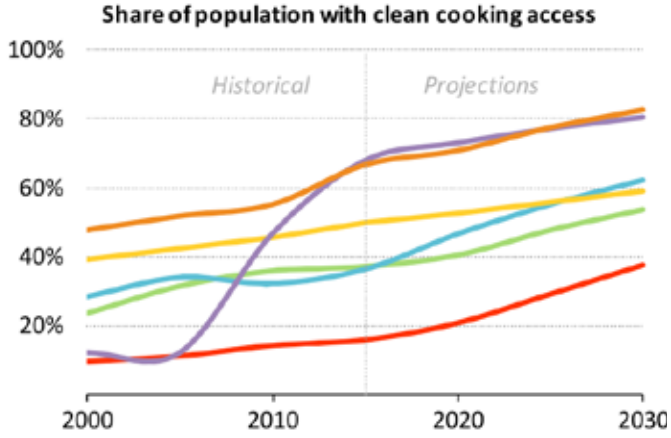
Are we on track to achieving universal clean cooking access?

The world is far from being on track to achieve universal access to clean and modern cooking fuels and technologies by 2030; the International Energy Agency's projections estimate that 2.3 billion people will still remain without access to clean cooking facilities in 2030 under current policy and population trends (IEA, 2017).

Countries with dedicated policy initiatives, such as China, India and Indonesia, are exhibiting significant reductions in the population without access to clean cooking. In sub-Saharan Africa, over 300 million people are expected to gain access to clean cooking by 2030. However, clean cooking efforts would not keep pace with the population, leaving 820 million people or 56 per cent of the population reliant on biomass as their main cooking fuel, an increase relative to today's number.

Figure 2.1

Population with and without access to clean cooking by region in the New Policies Scenario (IEA, 2017)



Red: sub-Saharan Africa; Blue: India; Purple: Indonesia; Yellow: Other Southeast Asia; Green: Other developing Asia; Orange: China

Key challenges

1. **Supply** Household cooking decisions are often driven by the lack of clean, affordable and available alternatives. Stable supplies of affordable clean fuels and energy sources are essential to enable the adoption of clean household energy. The WHO's normative guidance recommends prioritizing transitional fuel and technologies that provide some level of health benefit in contexts where the shift to universal access to clean fuels and technologies will take time.

2. **Demand** Barriers to sustained adoption of clean cooking practices include the cost of the clean fuel and/or device, consumer preference and practice, cultural appropriateness of the device, perceptions about the taste of food and lack of understanding of the health, livelihood and environmental impacts of polluting fuel use. Fuel and stove stacking is a particular barrier to achieving the full benefits of clean cooking technologies. Similarly, the transition to clean fuels and technologies for other energy end uses (heating, lighting, and others) is essential to ensure the maximal benefits. Large-scale awareness-raising and behavioural change campaigns should be enacted to better ensure long-term adoption of clean-cooking solutions.
3. **Enabling Environment** Monetary and fiscal policies that restrict and inhibit sector growth, lack of prioritization in both funding and implementation, and poor cross-sectoral coordination all prevent the clean-cooking sector from scaling to sustainability. Governments should enact policies that can enable sectoral growth to provide clean and efficient cooking technologies that ensure health, climate and gender impacts. International policymakers and donors can support this process through capacity-building of government officials and providing resources to both public and private cookstove and fuels stakeholders.

Policy recommendations

About half of the world's people cook their meals and heat and light their homes, using dangerously polluting fuels and devices, with tragic consequences: 4 million dead each year, just from breathing in smoke from fires lit for cooking alone. Most of them are women and children. These deaths are preventable. So too are the countless hours lost to gathering wood, and the significant contribution to atmospheric warming made by pollution from all household combustion. Achieving the 2030 objective requires providing clean cooking facilities to around 3 billion people. The greatest challenge is delivering clean solutions in rural areas, where 1.8 billion people are projected to remain reliant on the traditional use of biomass at the current level of investment. (IEA, 2017)

1. **Future policies should focus on scaling up cooking fuels and technologies that are clean for health, as defined by the WHO Guidelines, to ensure maximum benefits from the energy transition.** Where clean cooking fuels and technologies are reliably and affordably available, they should be scaled up with the help of enabling government policies and investments that support enterprise growth.
2. **During the process of shifting to exclusive use of clean cooking fuels and technologies, transitional options that can provide some health and environmental benefits should be promoted**. In order to ensure that these transitional fuels and technologies are as clean as possible, the performance of these options should be verified with laboratory and field testing.
3. **Governments should increase investments to accelerate the adoption of clean-cooking solutions and overcome barriers such as liquidity constraints, limited access to clean alternatives and poor reliability of clean fuel delivery and availability**. A cumulative US$ 42 billion in investment, the equivalent of around US$ 3 billion per year, is needed to achieve universal access by 2030.
4. **Governments should encourage multi-sectoral coordination and action between health, climate and energy sectors.** A multi-sectoral approach is critical to shift the needle on universal clean-cooking access. Mainstreaming clean-cooking solutions will help ensure they have high impact in these areas, as well as on women's empowerment and livelihoods.

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