



POLICY BRIEF #2

ACHIEVING UNIVERSAL ACCESS TO CLEAN AND MODERN COOKING FUELS AND TECHNOLOGIES

Developed by:

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DRAFT FOR PUBLIC CONSULTATION

This document is a part of a series of Policy Briefs being developed to support SDG7 review at the UN High-Level Political Forum to be held in July 2018. The objective is to inform intergovernmental discussions by providing substantive inputs on SDG7 and its interlinkages with other SDGs prepared through inclusive multi-stakeholder consultation processes. The development of these Policy Briefs is coordinated under the auspices of the Ad Hoc Informal Multi-stakeholder Technical Group of Advisors on SDG7.

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KEY MESSAGES

Universal access to clean and modern energy for cooking is integral to SDG 7 and critical for several other SDGs, particularly on good health and well-being, gender equality, climate action, and eliminating poverty. Despite progress towards universal access to clean and modern cooking systems (more fuel efficient and/or lower emissions), 40% of global households, or around 3 billion people, continue to prepare their daily meals with traditional stoves and fuels, posing risks to their health, the environment, and climate. Annually there are 4.3 million deaths (7.7% of total global mortality) from exposure to household air pollution. Without urgent action to scale up access to modern energy cooking solutions through policies, financing, and technology development, the world will fall short of Goal 7 and several other related SDGs.

Priority Actions

- **Policy:** Governments in countries with a high reliance on the traditional inefficient cookstoves and fuels need to translate global commitments into concrete, implementable domestic policies and plans to increase access to clean and modern cooking energy. Those that have already taken laudable steps towards national plans must accelerate the implementation of such plans.
- **Policies/programs should be evidence-based** to ensure that promoted technologies and fuels achieve desired benefits (e.g. health, climate).
- **Identify opportunities or synergies** where clean and modern household energy could be mainstreamed or incorporated into other programmes and policies (e.g. climate mitigation, sanitation improvement, maternal and child health programmes).
- **Financing and Investment:** Governments and development agencies need to invest more funds in the sector with the objective to crowd in private investments (e.g. through incentives or risk mitigation mechanisms).
- **Technology:** High-performing biomass stoves can be a transitional or interim solution where infrastructure barriers prevent access to the cleanest options (such as electricity, liquefied petroleum gas or LPG, and ethanol fuels) Although factors beyond the fuel and technology used for cooking (e.g. ventilation, time spent cooking, etc.) can also play an important role in determining the ultimate health impact (see Box 2), certain fuels and technologies are always clean for health at the point of use, including LPG, electricity, natural gas, ethanol, biogas, and solar. Solutions need to consider cultural contexts and include women at all stages of the value chain, including in development, distribution, retail, and servicing.
- **Multi-Sectoral Action:** To achieve universal access to clean and modern cooking, decision making and planning must be cross-sectoral, including policy makers for energy, health, education, climate, as well as private sector development and financing.
- **Monitoring:** Improved monitoring of household energy use, including primary and supplementary cooking fuels and technologies, 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 technologies.

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 is a root cause of poverty, poor health, gender inequality, environmental degradation, air pollution, and contributes to 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, including health and wellbeing, gender equality, environmental protection, climate action, and sustainable cities. Moreover, clean cooking is particularly relevant to fulfilling the 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.

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 to clean and modern cooking. More than 4 million deaths are attributed to traditional cooking methods annually. Exposure to household air pollution (HAP) contributes to myriad 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 wellbeing (Goal 3) of women, children, and infants are disproportionately compromised by HAP; research suggests that cooking with biomass fuels may increase blood pressure in pregnant women, cause lower birth weight of

Box 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. Any type of cookstove 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. The Guidelines discourage household use of kerosene and unprocessed coal in the home, due to significant health risks from these fuels. An improved biomass cookstove (ICS) typically describes a stove with higher efficiency or lower emissions than a traditional stove, but can include a wide range of performance. 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.

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.

Traditional cooking also poses barriers to women’s and girls’ equality, since they often 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. For example, girls in homes using polluting fuels spent about 18 hours weekly collecting fuel or water, while girls in homes mainly using clean fuels averaged only 5 hours in 16 African countries surveyed (WHO 2016). Without addressing time poverty that women and girls face, gender equality (Goal 5) cannot be fully achieved.

Furthermore, emissions from traditional cookstoves and fuels also slow progress on environment and climate Global Goals (**Goals 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

Box 2. Measuring Energy Access with the Multi-Tier Framework

Historically, access to energy for cooking was equated with the use of nonsolid fuels as the primary cooking energy source. However, this binary metric fails to fully capture the multifaceted nature of the underlying phenomenon, and a more comprehensive methodology could better inform energy policy, planning, project implementation. It is important to consider the role of the cookstove and cooking better reflect the underlying scientific evidence regarding interlinkages between cooking emissions, indoor air quality, and health risks. In addition, convenience aspects such as the time and effort involved in collecting or preparing the fuel are ignored. Other attributes of household access to cooking solutions such as availability and affordability of fuel, and safety, are also important to consider.

Access to cooking solutions is affected by factors such as variations in type and quality of fuel used, different cooking practices, proper use of equipment, and the size of the kitchen and the degree of ventilation. In essence, access to energy for cooking refers to the usability of the cooking solutions in the context of the various attributes mentioned above and with an emphasis on end users’ experience, and not just the availability of a clean cooking fuel or technology.

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* (Figure 1).

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Continuation of Box2.

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 really better capture the energy access situation and serves as a comprehensive tool to measure access to modern energy cooking service and informing policy designs.



Figure 1. MTF measured cooking solutions via 6 key attributes

forests. Additionally, HAP contributes up to 25% 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.

Current status of clean cooking fuel and technology access

Worldwide, around 3 billion people do not have access to clean and modern fuels and technologies for cooking, meaning that they cook with fuels and technologies including fuelwood, charcoal, coal, agricultural residue, dung, and kerosene. 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. In low- and middle-income countries, this constitutes 53% of the population without access (and 43% of the global population). Since 2000, the number of people in low- and middle-income countries with access to clean cooking has grown by 60%, 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 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 year since 2010, largely replaced by natural gas, LPG and electricity demand especially in urban areas driven by policy efforts targeting clean cooking. In India, though the number of people without clean cooking access has plateaued around 780 million since 2010, the Government’s Pradhan Mantri Ujjwala Yojana Programme is set to provide LPG connections to 50 million households living below the poverty line by 2019. Data for these estimates comes from nationally-representative census and surveys in the WHO Household energy database, as well as analysis by IEA (WHO 2017 and IEA 2017).

Are we on track to achieving universal clean cooking access?

The world is far from being on track to achieving 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, 2 billion of whom will be reliant on solid biomass and waste. Strong population growth hides some substantial, though uneven, progress: 900 million people are projected to gain access to clean cooking over this period, mainly in urban areas, where the number of people relying on biomass is projected to decline by over 40% based on current trends and policies. In rural areas, the population relying on biomass as their main cooking fuel decreases from 2 to 1.8 billion people, but 60% of the rural population in developing countries is still projected to remain without access by 2030 (IEA 2017).

The greatest progress is seen in developing Asia, where the share of biomass used in buildings for overall energy demand declines from 50% today to 33% in 2030, largely replaced by LPG and electricity for cooking. Countries with dedicated policy initiatives, such as China, India, and Indonesia, see significant reductions in the population without access to clean cooking. In sub-Saharan Africa, over 300 million people will gain access to clean cooking by 2030, an estimated 100 million of them from clean cooking pledges in countries’ Nationally Determined Contributions. However, clean cooking efforts do not keep pace with the population, leaving 820 million people or 56% of the population reliant on biomass as their main cooking fuel, an increase relative to today’s number.

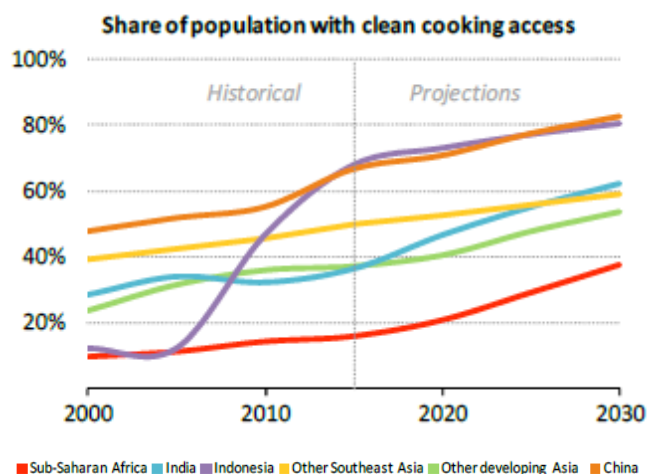


Figure 2: Population with and without access to clean cooking by region in the New Policies Scenario (IEA 2017)

POLICY BRIEF #2: Achieving Universal Access to Clean and Modern Cooking Fuels and Technologies

Key Challenges

1. Addressing fuel stacking: Clean fuels and technologies must be used for both main and supplemental cooking activities to achieve the full benefits. Similarly, the transition to clean fuels and technologies for other energy end uses (heating, lighting, and others) will be essential for maximum benefits. In the interim, the WHO's normative guidance recommends prioritizing fuel and technologies that provide some level of health benefit, even if they do not achieve emission recommendations in line with the guideline limit during the transition to universal access to clean fuels and technologies.
2. Ensuring solutions are affordable, accessible and reliable: Household cooking decisions are driven by the lack of clean, affordable, and available alternatives. For example, recently a few advanced biomass combustion stoves have become available but are too expensive, not amenable to cultural cooking practices and/or limited in number for large-scale adoption. Stable supply of affordable clean fuels and energy sources are essential to shift households away from polluting fuels. To accelerate adoption of clean fuels and technologies, governments must accelerate efforts to create enabling environments for access and supply.
3. Encouraging behaviour change and incorporating preference, practice and culture into cleaner cooking technologies and fuels and dissemination programs: Barriers to sustained adoption of clean cooking practices include the cost of the clean fuel and/or device, cultural appropriateness of the device, perceptions about taste of food, and lack of understanding of the health, livelihood and environmental impacts of polluting fuel use.

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: 4.3 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 and uncounted 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, over one billion of whom live in developing countries in Asia.

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 investment that supports enterprise growth.
2. **During the process of shifting to clean cooking fuels and technologies, transitional options that can provide some health benefits and significant environmental benefits**

should be promoted. The most effective short-term solution for some contexts are advanced combustion biomass cookstoves. 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 \$42 billion in investment, the equivalent of around \$3 billion per year, is needed to achieve universal access by 2030. To put this figure in context, roughly \$270 billion was spent on fossil-fuel consumption subsidies in 2016.
4. **Governments should encourage multi-sectoral coordination and action between health, climate energy sectors.** A multi-sectoral approach is critical to shift the needle on universal clean cooking access and will help ensure clean cooking solutions have high impact in these areas, as well as on women's empowerment and livelihoods.

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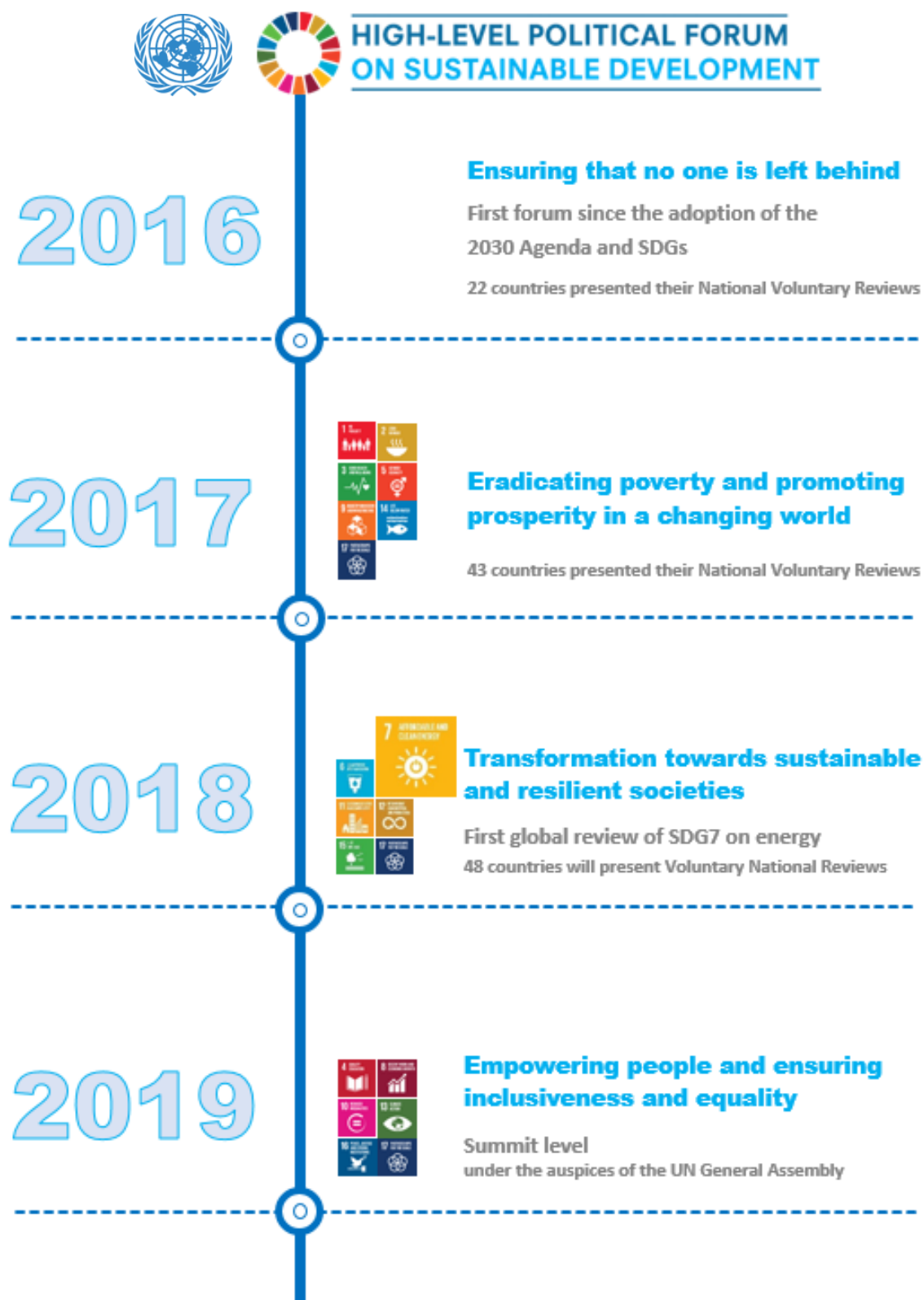
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