

The Complexity of Cleaner Cookstoves

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This document provides a general overview of the discussion without implying complete consensus among the panelists on the points below.

The problem

- According to the panelists more than 2.5 billion people still rely on solid biomass as a fuel for cooking, heating and lighting and either cannot afford fossil fuel or do not have access to it. Many in the richer world continue to use wood for heating.
- Inefficient burning of biomass emits significant amounts of pollutants that have negative health effects including carcinogenic soot particles. About 2 million people, mainly women and children, die prematurely every year from indoor air pollution related to traditional cookstoves.
- Cookstove smoke contains gases and particles that are able to change the climate, mainly causing a warming effect. These climate-warming substances include, in addition to CO₂, soot (black carbon), methane and gases that lead to the formation of ozone.

What is needed?

- Stoves need to meet the needs of the families which often goes beyond a simple “cooking device”. The stove needs to be apt for cooking a variety of meals, have the number of burners required, and provide heating in colder climates, among other needs. Stoves also need to be usable with fuel that is available at reasonable cost and effort.
- Panelists also emphasized the need for going to the field, including field measurement of emissions, pilot studies of stove and stove dissemination efforts, and other on-the-ground experience for understanding and identifying ways to scale up access to cleaner stoves.

Solutions and challenges

- Identification of both climate and health impact may attract additional funds and attention to a long-standing development challenge.
- Many of the technical challenges have already been overcome and new burners are able to reduce emissions, cooking time and fuel consumption. This reduces effects on health and climate. Production, dissemination, and customization and lower costs are the new challenges.

- Deepening of markets is cause for optimism. Mass production of at least some parts of stoves is already feasible and happening in countries like China. Dissemination channels into poorer areas are increasingly available. Financial access is also expanding.
- However, these developments in the market are not immediate panaceas. Some of these market-based channels still cannot reach the poorest of the poor. Continued innovations in financing, subsidy support, and potentially carbon credit like rewards for adoption will be important. Questions regarding regulatory aspects of cookstoves have not yet been fully explored.
- Replacing traditional cookstoves is not only a technological challenge but also a social challenge. Families will not decide to invest in a cleaner cookstove because it is beneficial for climate change mitigation. The new burner needs to be better for the household's conditions than the old one as well as affordable.
- In order to make the stove valuable for the user, they need to be integrated into the stove design process from the very beginning. Ideally, the creation of a new burner is an iterative process; this takes time. But this preparation is essential to make sure that the customized solution will be popular and work for that particular region.

Strengthening Collaboration on Cookstoves

- Scientists need to improve the understanding of the implications from cookstove replacement for health and climate in order not to raise expectations too high or to keep them too low failing to trigger the right amount of action.
- The framing remains challenging. Cookstove initiatives are sometimes accused of blaming the poor for pollution; when the intention is rather to help and to guarantee a more sustainable life with higher quality for all.
- Participants felt that we were close to solving some of the problems of scale, as the Global Alliance for Clean Cookstoves (GACC) and the Climate and Clean Air Coalition (CCAC), have been formed and create momentum for large-scale implementation of cleaner cookstoves.
- Collaboration across sectors (designers, scientists, manufacturers etc.) will help bridging gaps on the one hand and improve stove design for the sake of health and climate. While health related ISO standards are on the way, less information exchange has happened with regard to climate mitigation. All panelists called for more communication between climate science and stove design and marketing community. Science and public health both play an important role in setting goals for “clean combustion” and performance even as the field experience of designing and marketing stoves provides essential insight into adoption.