



Supportive Environments for Healthy Communities

### Issue 53 April 27, 2012 | Focus on Cookstove Adoption

This *WASHplus Weekly* contains 2011 and 2011 reports and videos about factors that affect the adoption of cookstoves. Several studies show that income and education are positively associated with adoption in most cases. However, potentially important factors such as credit, supply-chain strengthening, and social marketing have been ignored. The resources below include global reviews about cookstove adoption and country reports from Ethiopia, India, Mexico, Mozambique, Pakistan, Senegal, Tanzania and Uganda. Videos from Columbia and Stanford universities discuss social and other factors that influenced cookstove adoption in Bangladesh and India.

As many of you already know, there is also a debate currently underway that includes posts on Washington Post and New York Times blogs and elsewhere about a Brian Palmer editorial on a study in India entitled *Up in Smoke* and Palmer's conclusion that "we're not yet ready to distribute clean stoves worldwide." We've posted a link to the editorial and will also be tracking responses to this editorial on the WASHplus [Indoor Air Pollution Updates](#).

*Please let WASHplus know at any time if you have resources to share for future issues of WASHplus Weekly or if you have suggestions for future topics. An [archive](#) of past Weekly issues is available on the WASHplus website.*

#### GENERAL/OVERVIEW SOURCES

- **Adoption and Sustained Use of Improved Cookstoves**, *Energy Policy*, 2011. I Ruiz-Mercado. ([Link](#))

The adoption and sustained use of improved cookstoves are critical performance parameters of the cooking system that must be monitored just like the rest of the stove technical requirements to ensure the sustainability of their benefits. Therefore, to better understand the adoption process and assess the impacts of introducing a new stove it is necessary to examine the relative advantages of each device in terms of each of the main cooking practices and available fuels. An emerging generation of sensor based tools is making possible continuous and objective monitoring of the stove adoption process (from acceptance to sustained use or disadoption), and has enabled

its scalability.

- **Benefits and Costs of Improved Cookstoves: Assessing the Implications of Variability in Health, Forest and Climate Impacts**, *PLoS ONE*, Feb 2012. M Jeuland, Duke University. ([Link](#))

Current attention to improved cook stoves (ICS) focuses on the “triple benefits” they provide: improved health and time savings for households, preservation of forests and associated ecosystem services, and reducing emissions that contribute to global climate change. Despite the purported economic benefits of such technologies, progress in achieving large-scale adoption and use has been remarkably slow. This article documents the costs and benefits of these technologies and the reasons why uptake has been disappointing.

- **Igniting Change: A Strategy for Universal Adoption of Clean Cookstoves and Fuels**, 2011. Global Alliance for Clean Cookstoves. ([Link](#))

This report is designed as a comprehensive vision for the cookstove sector to achieve universal adoption of clean cookstoves and fuels. The strategy charts three critical pillars of activity – enhancing demand, strengthening supply and fostering an enabling environment as key components of a thriving market for clean cookstoves and fuels.

- **Who Adopts Improved Fuels and Cookstoves? A Systematic Review**, *Env Health Perspec*, Feb 2012. J Lewis. ([Link](#))

Research studies show that income, education, and urban location are positively associated with adoption in most (not all) studies. However, the influence of fuel availability and prices, household size and composition, and gender is unclear. Potentially important drivers such as credit, supply-chain strengthening, and social marketing have been ignored.

## COUNTRY REPORTS

- **Adoption and Use of Improved Biomass Stoves in Rural Mexico**, *Energy for Sustainable Development*, June 2011. K Pine, University of California, Irvine. ([Link](#))

In households that rely on biomass for a large percentage of their energy needs, adoption of improved biomass stoves can result in significant reduction of indoor air pollutants and emissions of greenhouse gasses with concurrent health co-benefits. To maximize the effectiveness of the stove dissemination process, promoters should choose target populations that are both likely to adopt the new technology and to influence the opinions of other potential adopters within a social group.

- **Cleaner Hearths, Better Homes: New Stoves for India and the Developing World**, 2012. D Barnes, ESMAP. ([Link](#))

This book has a twofold goal: describing India’s best legacy improved biomass stove programs and recommending ways in which the international community can promote stoves that are commercially viable, convenient for users, and more energy efficient.

- **Cookstoves in Tanzania: User Insights and Opportunities**, 2012. IDEO. ([Link](#))  
IDEO used a human-centered design approach to examine the habits, motivations, and aspirations of cookstove users in Tanzania. It developed a consumer-based understanding of cookstove adoption and actionable opportunity areas for Global Alliance for Clean Cookstoves and its stakeholders to explore. Although focused on the Tanzanian market, many of the insights and opportunities are relevant globally.
- **A Recipe for Success? Randomized Free Distribution of Improved Cooking Stoves in Senegal**, 2012. G Bensch, Ruhr-Universität Bochum (RUB), Department of Economics. ([Link](#))  
Wood provision is often time-consuming and the emitted smoke has severe health effects – both burdens that afflict women in particular. The dissemination of improved cooking stoves (ICS) is frequently considered an effective remedy for these problems. This paper evaluates the take-up of ICS and their impacts through a randomized controlled trial in rural Senegal.
- **What Impedes Efficient Product Adoption? Evidence from Randomized Variation in Sales Offers for Improved Cookstoves in Uganda**, n.d. D Levine, University of California. ([Link](#))  
Many people do not purchase products that appear beneficial. For example, the price of an efficient cookstove can be less than a few months' savings on fuel. If liquidity constraints, present bias, and poor information on fuel savings and stove durability are barriers, then a novel sales offer combining a free trial, time payments, and the right to return the stove at any time should increase sales. In a randomized trial, this sales offer increases sales of an efficient charcoal-burning stove in Kampala, Uganda, from 5% to 45%.
- **What Makes People Adopt Improved Cookstoves? Empirical Evidence from Rural Northwest Pakistan**, *Renewable and Sustainable Energy Reviews*, March 2012. I Jan. Institute of Development Studies (IDS). ([Link](#))  
Using regression analysis, the study depicts that education and household income are the most significant factors that determine a household willingness to adopt improved biomass stoves. The study concludes that the rate of adoption could substantially be improved if the government and non-governmental organizations play a greater role in overcoming the social, economic, cultural, political, and institutional barriers to adopting improved cooking technologies.
- **Will African Consumers Buy Cleaner Fuels and Stoves? A Household Energy Economic Analysis Model for the Market Introduction of Bio-Ethanol Cooking Stoves in Ethiopia, Tanzania, and Mozambique**, 2011. T Takama, Stockholm Environment Institute. ([Link](#))  
This report presents a study conducted by the Stockholm Environment Institute to assess the role of socio-economic attributes and product-specific attributes as

determinants of cooking stove choice at the household level. The study involved a stated preference survey to investigate household-level preferences of cooking fuels and stoves; the survey included 200 households in Addis Ababa, Ethiopia, 564 households in Dar es Salaam, Tanzania, and 402 households in Maputo, Mozambique.

## VIDEOS

- **Cookstove Adoption in Bangladesh**, Stanford University. ([Video](#)) 24 min  
Grant Miller, an assistant professor of medicine at Stanford, presents interdisciplinary Environmental Venture Project research on social factors influencing the adoption of improved efficiency cookstoves in Bangladesh.
- **Energy Use Behavior and Cooking Practices: The Adoption and Sustained Use of Biomass Stoves**, I Ruiz-Mercado, UC Berkeley. ([Video](#)) 10 min  
A recording of Ilse Ruiz-Mercado's presentation on Energy Use Behavior and Cooking Practices at the Behavior, Energy and Climate Change Conference 2011.
- **Innovating for Development: Paul Hudnut**, Journal of International Affairs. ([Video](#)) 4 min  
Paul Hudnut, co-director of the Colorado State University Global Innovation Center, spoke about his work to develop clean and efficient cook stoves for consumers in India and elsewhere. He argued that marketing is often the missing link in technological solutions to environmental problems.

Each WASHplus Weekly highlights topics such as Urban WASH, Indoor Air Pollution, Innovation, Household Water Treatment and Storage, Hand Washing, Integration, and more. If you would like to feature your organization's materials in upcoming issues, please send them to Dan Campbell, WASHplus knowledge resources specialist, at [dacampbell@fhi360.org](mailto:dacampbell@fhi360.org).



**About WASHplus** - WASHplus, a five-year project funded through USAID's Bureau for Global Health, creates supportive environments for healthy households and communities by delivering high-impact interventions in water, sanitation, hygiene (WASH) and indoor air pollution (IAP). WASHplus uses proven, at-scale interventions to reduce diarrheal diseases and acute respiratory infections, the two top killers of children under five years of age globally. For information, visit [www.washplus.org](http://www.washplus.org) or email: [contact@washplus.org](mailto:contact@washplus.org).

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