



Supportive Environments for Healthy Communities

Issue 76 October 26, 2012 | Focus on Climate Change

This issue contains recent studies and reports about how cookstove emissions affect climate change and the effects of climate change on water resources and water-related diseases. A recent fact sheet estimated that universal adoption of advanced biomass cookstoves could have an impact equivalent to reducing CO₂ emissions by about 25 to 50 percent. A series of recent UN reports also emphasized the importance of introducing clean-burning biomass to mitigate climate change and improve air quality. Increasingly variable rainfall patterns are likely to affect the supply of fresh water. In extreme cases, water scarcity leads to drought and famine. Climatic conditions strongly affect waterborne diseases and diseases transmitted through insects, snails, or other cold blooded animals. Changes in climate are likely to lengthen the transmission seasons of important vector-borne diseases and to alter their geographic range.

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.

HOUSEHOLD ENERGY/COOKSTOVES

Websites

- **USAID: Promoting Affordable, Efficient Cookstoves.** ([Link](#))
USAID is working to reduce the adverse effects of household energy use by encouraging families to switch to cleaner, more efficient fuels and technologies. Its programs support the adoption of affordable stoves that require less fuel to meet household energy needs and release fewer pollutants.

Reports/Articles

- **Benefits and Costs of Improved Cookstoves: Assessing the Implications of Variability in Health, Forest and Climate Impacts.** *PLoS ONE*, 7(2) 2012. M Jeuland. ([Full text](#))
Current attention to improved cookstoves focuses on the “triple benefits” they provide,

in improved health and time savings for households, in preservation of forests and associated ecosystem services, and in reducing emissions that contribute to global climate change.

- **Clean Cookstoves and Climate Change: Fact Sheet.** 2012. Global Alliance for Clean Cookstoves. ([Full text, pdf](#))

In addition to the health and economic empowerment benefits associated with their use, clean cookstoves and fuels can also lead to a more sustainable and cleaner environment. If appropriately designed and disseminated, clean cookstoves can reduce a large share of emissions from cooking with biomass.

- **Climate Change: Clean, Efficient Wood Stoves Good for People and the Planet.** *IPS News, Jan 2012.* ([Link](#))

In his quest to make the most efficient possible use of energy generated through wood combustion, Salvadoran René Núñez developed a simple but highly efficient wood stove that produces no smoke and reduces greenhouse gas emissions by 95 percent.

- **Global Air Quality and Health Co-Benefits of Mitigating Near-Term Climate Change through Methane and Black Carbon Emission Controls.** *Env Health Perspec, June 2012.* S Ananberg. ([Full text](#))

In addition to climate benefits, findings indicate that methane and black carbon emission control measures would have substantial co-benefits for air quality and public health worldwide, potentially reversing trends of increasing air pollution concentrations and mortality in Africa and South, West, and Central Asia.

- **Global Bang for the Buck: Cutting Black Carbon and Methane Benefits Both Health and Climate.** *Env Health Perspec, June 2012.* B Weinhold. ([Full text](#))

Black carbon and methane have both been implicated in climate change. They also pose more direct human health threats, with black carbon constituting one component of fine particulate matter and methane acting as a precursor of ground-level ozone. An international team of researchers analyzed 14 control measures for human-caused emissions of black carbon and methane to investigate health benefits that might occur in tandem with actions to help mitigate climate change in the next 20 to 40 years. The 14 measures target sources such as fossil-fuel operations, vehicle emissions, landfill gas, sewage, agriculture, brick kilns, and biomass-fueled cookstoves.

- **Household Cookstoves, Environment, Health, and Climate Change,** 2011. World Bank. ([Full text, pdf](#))

This report presents mounting evidence that biomass burned inefficiently contributes to climate change at regional and global levels, suggesting that the climate change debate needs to take household energy issues into consideration. In developing countries, about 730 million tons of biomass are burned each year, amounting to more than 1 billion tons of carbon dioxide (CO₂) emitted into the atmosphere.

- **Real-Time Assessment of Black Carbon Pollution in Indian Households Due to Traditional and Improved Biomass Cookstoves.** *Env Sci Tech*, Jan 2012. K Abhishek. ([Full text, pdf](#))

Use of improved (biomass) cookstoves (ICS) has been widely proposed as a black carbon mitigation measure with significant climate and health benefits. ICS encompass a range of technologies, including natural draft stoves, that feature structural modifications to enhance air flow, and forced draft stoves, which additionally employ an external fan to force air into the combustion chamber. This paper presents, under Project Surya, the first real-time in situ black carbon concentration measurements from five commercial ICS and a traditional (mud) cookstove for comparison.

WATER/WATER-RELATED DISEASES

- **Climate Change Adaptation and Vulnerability Assessment of Water Resources System in Developing Countries: A Generalized Framework and a Feasibility Study in Bangladesh.** *Water* 4(2) 2012. A Gain. ([Full text](#))

Water is the primary medium through which climate change influences the Earth's ecosystems and therefore people's livelihoods and well-being. Besides climatic change, current demographic trends, economic development, and related land use changes have direct impact on increasing demand for freshwater resources.

- **Climate Change as a Wicked Problem: An Evaluation of the Institutional Context for Rural Water Management in Ghana.** *SAGE Open*, May 2012. J FitzGibbon. ([Full text, pdf](#))

The physical consequences of climate change on Ghana's water resources are progressively worsening. At the same time, existing institutional arrangements demonstrate weak capacities to tackle climate change-related complexities in water management. Therefore, a dynamic approach is warranted, imbued with complex and adaptive systems thinking, which also capitalizes on instrumental gains from prior existing institutions.

- **Climate Change: Lessons from the Developing World,** *USAID Global Waters*, Aug 2011. ([Full text](#))

This issue discusses USAID efforts to mitigate the impacts of climate change on water supplies.

- **Climate Change, Water Stress, Conflict and Migration,** 2012. Alliance for the University of Peace. ([Full text, pdf](#))

This publication includes a collection of papers presented at the Symposium "Climate change, water stress, conflict and migration" held on 21 September 2011 in The Hague, the Netherlands. It also provides a summary of the conclusions and recommendations of the symposium.

- **The Global Water Crisis: Addressing an Urgent Security Issue**, 2012. United Nations University. ([Full text, pdf](#))

The authors make it clear that there is no question that water scarcity is becoming a major issue. Water scarcity will be compounded in one way or another by climate change, and it will be important for decision-makers to understand why climate change will play such a crucial role. Aside from inducing warmer temperatures, decision-makers will need to grasp exactly how climate change will affect water security.

- **Managing Climate Change Impacts on Waterborne Disease in Uganda**, 2012. S Harper, Africa Portal. ([Full text](#))

Unusual heavy rainfall and flooding in Uganda have been attributed to climate change and have led to outbreaks of waterborne diseases, adding stress to the country's already fragile health system. Combating climate change and its effects is not a top priority in Uganda evidenced by the lack of adequate funding for related programs, which compete for cash flows with other urgent national priorities such as poverty eradication and security concerns.

- **Managing Water Under Uncertainty and Risk: World Water Development Report**, 2012. UNESCO. ([Full text](#))

The WWDR4 is a comprehensive review of the world's freshwater resources and seeks to demonstrate, among other messages, that water underpins all aspects of development, and that a coordinated approach to managing and allocating water is critical.

- **Options for Water Storage and Rainwater Harvesting to Improve Health and Resilience against Climate Change in Africa**, 2012. E Boelee. ([Full text, pdf](#))

West and East Africa experience high variability of rainfall that is expected to increase with climate change. This results in fluctuations in water availability for food production and other socioeconomic activities. Water harvesting and storage can mitigate the adverse effects of rainfall variability. But past studies have shown that when investments in water storage are not guided by environmental health considerations, the increased availability of open water surface may increase the transmission of water-related diseases.

- **Testing a Rapid Climate Change Adaptation Assessment for Water and Sanitation Providers in Informal Settlements in Three Cities in Sub-Saharan Africa**. *Env & Urban*, Oct 2012. T Heath. ([Abstract](#))

This paper presents a Rapid Climate Adaptation Assessment for water and sanitation providers that generates recommendations on climate proofing for local service providers, utilities, and local governments.

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.



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 or email: contact@washplus.org.

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