



**Issue 155 | July 25, 2014 | Focus on Clean Cooking in Nepal**

This issue of WASHplus Weekly focuses on recent clean cooking and cookstove developments in Nepal and contains links to key resources, proceedings and presentations from the Clean Cooking Marketplace convened by the Nepal Clean Cooking Alliance and partners. It also includes links to research papers on the health impacts of biomass stove use in Nepal.

**Alternative Energy Promotion Centre: Clean Cooking Solutions for All by 2017.** ([YouTube](#))

Alternative Energy Promotion Centre (AEPC) is the focal agency of the Government of Nepal for the promotion and development of renewable energy technologies (RETs) in the country. AEPC is executing a framework renewable energy program called National Rural & Renewable Energy Program (NRREP) for 5 years (2012-2017). It is funded by the Government of Nepal and donors (Governments of Denmark, Norway, Germany and Britain). UNDP, SNV and GIZ are providing technical assistance for design and implementation of NRREP. Since its inception in 1996, AEPC has disseminated around 650,000 improved cook stoves (ICS), 280,000 biogas plants and around 600 solar cookers in Nepal.

**Website: Nepal Alliance for Clean Cookstoves.** ([Link](#))

Launched in July 2013, the Nepal Clean Cooking Alliance (NACC) recently celebrated its first anniversary.

NACC is a public-private collaboration platform initially hosted and promoted by the Alternative Energy Promotion Centre (AEPC). The Nepal Clean Cooking Alliance works as a national resource center for facilitation and information sharing in product improvement, financing, identifying and understanding market dynamics, enhancing demand and creating enabling environment, including policy advice.

**Proceedings: Nepal Clean Cooking Marketplace** ([Link](#))

The Clean Cooking Marketplace held in Kathmandu in July 2013 brought together key stakeholders in Nepal's cookstove sector, cookstove project implementers, and national and international cookstove entrepreneurs. The Marketplace provided a platform for exploration of "business to business" opportunities between international-national, national-national and national-local entrepreneurs.

**PRESENTATIONS**

**Nepal Clean Cooking Marketplace.** Links to presentations from the Nepal Clean Cooking

Marketplace are provided below:

### **A. Nepal: Clean Cooking Context Setting**

- *Background: Nepal Clean Cooking Marketplace 2013*, Saroj Rai, Senior Renewable Energy Advisor, SNV ([Link](#))
- *Clean Cooking Solutions for All in Nepalese Context*, Mr. Nawa Raj Assistant Director, AEPC ([Link](#))
- *National Improved Cooking Stove Programme at a Glance*, Karna Bajracharya, National Adviser, AEPC ([Link](#))
- *Improved Cookstoves & Fuel Markets in Nepal: Opportunities for All*, Mr. Saroj Rai, SNV ([Link](#))
- *Clean Cookstoves–Protecting Health and Environment*, Bidya Banmali Pradhan, Atmospheric Environment Specialist, International Centre for Integrated Mountain Development ([Link](#))

### **B. Nepal: National/Local Cookstove Program Implementers**

- *Improved Cooking Stoves: Measures for Climate Change Adaptation and Mitigation*, Pratima Shrestha and Ineej Manandhar, Hariyo Ban Program, CARE Nepal ([Link](#))
- *Clean Cooking Technologies Promotion in Nepal: Experience of Practical Action*, Min Bikram Malla, Project Manager, Practical Action Nepal Office ([Link](#))

### **C. Nepal: National/Local Cookstove Enterprises**

- *Improved Iron Cooking Stove*, Annanta Iron Industry, Tika Ram Rai, Proprietor ([Link](#))
- *MICS Promotion in High Hill*, Mr. Hasta Pandit President, Rural Technology Producers Association of Nepal (RUTPAN) ([Link](#))
- *Renewable Energy Water Supply and Sanitation Promotion Centre (REWSSPC)*, Mr. Sandeep Kantha ([Link](#))
- *Smart Urja* ([Link](#))
- *Sunder Nepal Sanstha* ([Link](#))
- *Alternative Approaches to Thermal Energy Delivery and Financing*, International Clean Cook Stoves Enterprises, Binu Parthan, Principal, SEA ([Link](#))
- *Matribhumi Improved Cooking Stove (M-ICS)* ([Link](#))

### **D. Investment in Clean Cookstoves Business**

- *Stove Enterprises in Nepal: Credit Financing for Clean Cooking Solutions*, Mr. Gokul Gautam, REMREC ([Link](#))
- *Role of Micro Finance Institutions (MFIs) to Promote Improved Cook Stoves (ICS) in Nepal*, Mr. Suman Shakya, Planet Finance ([Link](#))
- *Investment in Clean Cookstove*, Mr. Dinesh Dulal, Clean Energy Development Bank ([Link](#))
- *Implementation Modality of ICS in Rural Area through SKBKS/NACCFL Network*, Mr. Rudra Bhattarai, SKBKS ([Link](#))
- *Experience on Credit Financing on Improved Cooked Stove by NCF*, Mr. Babul Khanal, National Cooperative Federation ([Link](#))
- *AEPC's Carbon Financing Programme*, Mr. Nawa Raj, AEPC ([Link](#))
- *Cookstove Promotion through Carbon Financing*, Mr. Binod Prasad Shrestha, Winrock International ([Link](#))

### **E. International Clean Cookstove Enterprises**

- *Alternative Approaches to Thermal Energy Delivery and Financing*, Dr. Binu Parthan, Principal, Sustainable Energy Associates ([Link](#))
- *Navdurga Metal Industries – Bharat Emerging in Clean Cooking Solutions*, Mr. Saurab Sagar Jaiswal, Co-founder & CEO, NDMI-Bharat ([Link](#))
- *Tanu Solutions*, Mr. Purushotham Naidu, Director, Tanu Solutions ([Link](#))
- *Greenway Gramin*, Ankit Mathur, Co-founder ([Link](#))
- *Scaling Cookstove Innovation through Public-Private Partnership*, Ravi Kumar P., Operations Manager, Envirofit ([Link](#))
- *Life Rocket Stove*, Mr. Sheikh Mohammed Suleman, CEO, Global Clean Energy Corp. ([Link](#))
- *Prakti*, Dr. Mouhsine Serrar, Founder & CEO, Prakti ([Link](#))

## RESEARCH

### **Biomass Fuel Use and the Exposure of Children to Particulate Air Pollution in Southern Nepal**, 2014. D. Devakumar, et al., *Environ Int.* May 2014 ([Link](#))

This paper examines the exposure of children to air pollution in rural households in comparison to the World Health Organization and the National Ambient Air Quality Standards for Nepal recommendations for particulate exposure.

### **Indoor Air Pollution due to Inadequate Ventilation and its Impact on Health among Children of Less Than Five Years in Eastern Nepal**, 2014. Bijay Thapa and Nitendra Chaurasia, *Journal of Nobel Medical College*, Vol 3, No 1 (2014) ([Link](#))

The objectives of this study are to find out the prevalence of IAP in terms of housing, overcrowding & ventilation; and to assess the frequency, extent of biomass exposure and hazards on child health.

### **Humidity and Gravimetric Equivalency Adjustments for Nephelometer-Based Particulate Matter Measurements of Emissions from Solid Biomass Fuel Use in Cookstoves**, 2014. *International Journal of Environ Res Public Health*, Jun 19, 11(6):6400-16 ([Link](#))

This paper explores relative humidity (RH) and gravimetric equivalency adjustment approaches to be used to assess indoor PM concentrations for a cookstove intervention trial in Nepal.

### **Can Improved Cooking Stoves Work? The Nepal Chulo Experience**, 2013. D DWANDE, et al. ([Link](#))

This paper investigates sources of resistance to adopting the ICS by associating characteristics of the heads of households with their adoption decision.

### **Oxidative Potential of Smoke from Burning Wood and Mixed Biomass Fuels**, 2013. O. P. Kurmi, et al., *Free Radical Research* ([Order](#))

The aim of this study was to characterize the oxidative potential (OP) of particulate matter (PM) collected during the burning of wood and mixed biomass, while cooking food in the Kathmandu Valley, Nepal.

### **Impacts on Household Fuel Consumption from Biomass Stove Programs in India, Nepal, and Peru**, June 2013. Michael A. Johnson, et al. *Energy for Sustainable Development*, 24 June 2013 ([Order](#))

This paper presents results from a coordinated training and field study program sponsored by the U.S. Environmental Protection Agency, with the goal of increasing understanding of

household energy use by building capacity of stove implementing organizations.

**The State of Scientific Evidence on Air Pollution and Human Health in Nepal, 2013.** Gurung A, Bell ML. School of Forestry and Environmental Studies, Yale University, *Environ Research* ([Link](#))

This paper summarized the state of scientific evidence and identified research gaps based on the existing literature on health impacts of indoor and outdoor air pollution.

**Acute Lower Respiratory Infection in Childhood and Household Fuel Use in Bhaktapur, Nepal, 2013.** Bates MN, Chandyo RK, Valentiner-Branth P, Pokhrel AK, Mathisen M, Basnet S, Shrestha PS, Strand TA, Smith KR. Division of Environmental Health Sciences, School of Public Health, University of California, Berkeley, California, USA, *Environmental Health Perspectives* ([Link](#))

This case-control study was conducted among a population in the Bhaktapur municipality, Nepal, with the objectives of investigating the relationships of cooking fuel type to ALRI in young children.

**Biomass Stoves and Lens Opacity and Cataract in Nepalese Women, 2013.** , Amod K. Pokhrel, et al. *Optometry and Vision Science*, Vol. 90, No. 3 ([Link](#))

This study, in Pokhara City, in an area of Nepal where biomass cookstoves are widely used without direct venting of the smoke to the outdoors, focuses on biomass stove use and cataract.

**Reduced Lung Function Due to Biomass Smoke Exposure in Young Adults in Rural Nepal, 2013.** Kurmi OP, Devereux GS, Smith WC, Semple S, Steiner MF, Simkhada P, Lam KB, Ayres JG, University of Birmingham, Birmingham, *European Respiratory Journal* ([Link](#))

This study carried out a cross-sectional study of adults in a population exposed to biomass smoke and a non-exposed population in Nepal.

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WASHplus Weeklies will highlight 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).



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**About WASHplus** - WASHplus, a five-year project funded through USAID's Bureau for Global Health, supports healthy households and communities by creating and delivering interventions that lead to improvements in access, practice and health outcomes related to water, sanitation, hygiene (WASH) and indoor air pollution (IAP). WASHplus uses at-scale, targeted as well as integrated approaches 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).