



PARTNERSHIP FOR CLEAN INDOOR AIR

PCIA Bulletin

October 2008 Issue 17

This quarterly newsletter provides updates on the activities of the Partnership for Clean Indoor Air (PCIA) and its Partners to improve health, livelihood and quality of life by reducing exposure to indoor air pollution, primarily among women and children, from household energy use. More than **210** governments, public and private organizations, multilateral institutions, and others are working together to increase the use of affordable, reliable, clean, efficient, and safe home cooking and heating practices. Visit www.pciaonline.org to join!

This issue of the PCIA Bulletin is dedicated to reporting on some of the strategies and experiences of PCIA Partners in gaining media attention for the field of household energy, indoor air pollution and health, and their individual programs.

In this issue you will find four spotlight and feature articles on Partner strategies and experiences with the media, research studies of interest under "What's New," PCIA-relevant upcoming events, and our official 4th Partnership for Clean Indoor Air Forum flyer!

Do you have media experiences and tips not included here? Please email us at pciaonline@yahoo.com— tell us all about them! Please also check out our PCIA website media page at <http://www.pciaonline.org/media> and send us information on any media coverage we may have missed on our Partners, indoor air pollution and/or household energy and health.

Recent media listings have included:

-Indoor air pollution from biomass fuel smoke is a major health concern in the developing world; Transactions of the Royal Society of Tropical Medicine and Hygiene 102, Issue 9; September, 2008

-Cooking up Carbon Credits; Fortune; August 12, 2008

-Energy Globe Award - discerné au GERES Cambodge pour son programme énergie (French); riaed.net; August 4, 2008

-Now, Biomass Cooking Stoves in India; Sify news; July 9, 2008

As always, we welcome your feedback, including suggestions for future Bulletin themes, and urge you to share your own experiences through future issues.

***Register now for the
2009 PCIA Forum!***

***Financial support deadline
December 1, 2008***

**Kampala, Uganda
March 24- 28, 2009**

*For more information and to register, please
visit the PCIA Forum Registration page:
<http://www.pciaonline.org/2009ForumRegistration>*

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PARTNER SPOTLIGHT Paper Recycling Skills Project

Each quarter, the *PCIA Bulletin* highlights one or more Partners who are reducing women and children's exposure to indoor air pollution. This issue highlights the activities undertaken by the Paper Recycling Skills Project.

Using Branding in Communications and the Media George Riegg, General Manager, Paper Recycling Skills Project – PRSP; icecool@ganet.gm

The Paper Recycling Skills Project, founded in 2001 as a charitable organization in The Gambia, is now well established as the foremost recycling organization in the country. In our endeavour to achieve our two main objectives – protecting the environment and assisting education – we have adopted a totally holistic approach in developing new projects and forming pro-active partnerships with government, civil society and industry stakeholders.

We pride ourselves on our innovative approach to product development producing items ranging from beautifully handcrafted notebooks and albums made entirely from recycled materials to paper/sawdust compressed briquettes to replace fire wood in fuel efficient stoves we are planning to introduce as a component of one of our projects currently under development.

All profits generated from our various activities are invested into supporting education either by distributing free learning materials to needy students (over 45,000 exercise books since 2001) or by providing training and teaching assistance in environmental awareness building through workshops and lectures.

Environmental protection is a wide-ranging subject and huge efforts are made by Government and NGOs in The Gambia to coordinate stakeholders on a national level and prioritise the limited resources available. As a self-funding



community-based organisation PRSP had to develop methods to create **win-win** situations and turn commercial opportunities into community benefits.

Every cause needs a champion and our environment deserves the best. "*Environmental protection*" can be a very complex and abstract issue, especially in a society where over 65% of the population lives below the official minimum income subsistence threshold. As soon as we introduce a personal and human element, however, we create a focal point for all to understand.



For this reason, PSRP has introduced **Greenie**©. **Greenie** is a staunch environmentalist, loves all things natural and especially trees. She lives in The Gambia and likes planting things, nursing them and watching them grow. Her biggest horrors are litter and waste in the environment and she is always happy and eager to explore new ways of re-using and recycling and to share her experiences.

Our plan is to join her in her adventures of helping to make The Gambia an even more beautiful place to live in and to visit. Her stories will be told in little 24 page pamphlets, showing her in real-life situation photographs accompanied by fun and educational copy-writing. The booklets will be published by PRSP in collaboration with her artist creator, Caroczel, produced to a professional standard and will be a fun way to create environmental awareness for all age groups within the community.

There are three main beneficiaries who share each publication; for each print-run of 20,000 copies, for example, **14,000** copies will be at the disposal of the sponsor as a cost effective marketing tool to promote their corporate environmental involvement. **5,000** copies will be

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marketed and retailed by PRSP within The Gambia. Sales proceeds will be re-invested into environmental activities as part of our ongoing project portfolio. Our business model shows that sales proceeds are higher than the initial sponsor investment. This means more money towards environmental activities but also creates the additional benefit of circulating 20,000 copies of an environmental pamphlet within the community. This model demonstrates a classical **win-win** scenario for all players involved. **1,000** copies will be distributed free to Early Childhood Learning Centres to be used as teaching aids reaching a sector of the community where the positive environmental messages can have a long-lasting impact and will be further disseminated through the "family chain."

We intend this to be an ongoing project with a series of pamphlets and are inviting public and corporate domestic and international sponsors to become active partners and beneficiaries by supporting individual publications – thereby taking the opportunity to publicise their own involvement in protecting our environment. Individual publications can be customised in a sensitive way to highlight various organisations activities or products and their positive impact on the environment.



Additional marketing opportunities using **Greenie** as a mascot/symbol to promote environmental awareness will be explored in the future to firmly associate her image with responsible behaviour by all stakeholders who work in partnership to make The Gambia a "**Greenie**"-er, healthier and more prosperous society.

⚙️ FEATURE ARTICLES

Better Air Quality and Media: Bringing the message from the workshop to the world

Glynda Bathan, Policy and Partnerships Manager, CAI-Asia (glynda.bathan@cai-asia.org); www.cleanairnet.org/caiasia

Media is the voice of the conference. With media, the conference can speak to the world beyond the walls of the meeting halls, communicate the latest discoveries, and bring attention to the consensus or debate over important issues.

Conscious of media's power to reach large audiences and to deliver the message that cities must take immediate action to deal with air pollution, the Clean Air Initiative for Asian Cities (CAI-Asia) and TVE Asia Pacific (TVEAP) in partnership with the Asian Development Bank organized a pre-event to the Better Air Quality (BAQ) 2006 conference in Yogyakarta, Indonesia

on "Mobilizing Media for Cleaner Air in Asia." The pre-event was part of the capacity building effort to help promote better media coverage of clean air issues in Asia. The BAQ 2006 conference brought together over 900 representatives from industry, research, government and civil society groups committed to cleaner air in Asia. The BAQ 2008 conference will be held Bangkok this year on November 12-14 (www.baq2008.org).

Media scholarships were awarded to 24 journalists from print, broadcast and online media from Bhutan, China, India, Indonesia, Nepal, Pakistan, Sri Lanka and Viet Nam which enabled them to travel to BAQ 2006 and spend a working week in Yogyakarta. The highlight was a 2-day intensive training on air pollution basics and strategies to better communicate to policymakers on air pollution and its mitigation.

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Three senior Asian media professionals conducted the two-day training: Darryl D'Monte, former editor of The Times of India and founder President of [the International Federation of Environmental Journalists \(IFEJ\)](#); Lihong Shi, journalist, film-maker and environmental activist from China; and Nalaka Gunawardene, Director and CEO of TVEAP.

During the training, journalists also interacted with scientists and experts such as Dr. Axel Friedrich, then a transport expert with the Federal Environmental Agency in Germany; Dr. Jitendra Shah, an expert with the World Bank's East Asia and the Pacific office; and Dr. Dieter Schwela, Senior Scientist with the Stockholm Environment Institute based in York, UK, and lead author of "Urban Air Pollution in Asia Cities," a book launched at BAQ 2006 with an assessment of air quality management in selected cities in Asia.

Some key messages which the experts and Asia media trainers emphasized were:

- Clean air stories need a human face because scientific data, studies, and statistics alone are ineffective in engaging the public on air pollution and its mitigation, noted by Dr. Friedrich.
- Dr. Shah emphasized that the media can set and drive the agenda for cleaner air in Asia if it is able to speak to policy makers and the public in a language they understand.
- "Polluted air is silently and slowly killing hundreds of thousands of people every year. Yet no one has declared war on this mass killer," declared Dr. Schwela.
- Acknowledging how journalists struggle to publish or broadcast air quality and other environmental stories, Nalaka Gunawardene emphasized that "Cleaning up our fouled air involves governmental policy and regulation, industrial lobbies, technology choices, citizen

action and much more. There are vested interests, big money and a great deal of intrigue – all the elements that typically interest the media."

-Darryl D'Monte described the commitment and dedication needed to follow air quality stories. He cited how the Centre for Science and Environment in India was able to sustain its right to clean air campaign. He said, "For this, journalists have to do detailed research, get their facts absolutely right, and stay with the evolving stories. Air quality is not a one-off story."

-Lihong Shi presented China's experience in air quality management and how its efforts to clean up the air resulted from the media's awareness raising. She acknowledged that "In China, media has so far been more like an educator than watchdog on air quality issues."

After the training, journalists and producers attended and covered BAQ events of their choice. During this period, TVEAP and CAI-Asia arranged for the media trainers to provide on-site advice and mentoring to the journalists. Additionally, a professional camera crew was made available for TV journalists to record events and interviews. The media produced multiple articles and programs which were published or aired by their employer media organizations.

Based on CAI-Asia's count, at least thirty-four news articles and press releases were written and published in national and international newspapers and websites about the BAQ 2006 workshop and the need to take urgent action to clean up Asia's air.

For more information, please contact Glynda Bathan, Policy and Partnerships Manager, CAI-Asoa (glynda.bathan@cai-asia.org), Sophie Punte, Deputy Executive Director of the CAI-Asia Center (sophie.punte@cai-asia.org), and Nalaka Gunawardene, Director and CEO of TVEAP (nalaka@tveap.org).

Strategies for Working with the Media

Jögd Dieter Anhalt, Director, Instituto de Desenvolvimento Sustentável e Energias Renováveis (IDER: Institute for Sustainable Development and Renewable Energy); anhalt@ider.org.br; www.ider.org.br

IDER's media experience connected to promoting efficient cook stoves in the northeastern region of Brazil provides an excellent model for how to

translate good work done to success in the media, or also, how the media can help to create the success. IDER's initial improved stove project started out with only 20 units. The second phase resulted in 100 stoves installed in three municipalities. In less than a year a governmental program was initiated with in total 22,000 cook stoves. How could this happen?

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One fact was in IDER's favor: that efficient cook stoves were (and still are) a novelty in Brazil and never perceived as viable and cost-effective solution for environmental and health problems. During the installation of the pilot units, and as we became aware of the satisfaction of the families, we had to contain ourselves not to immediately involve the media, and in fact had to plead with some impatient journalists to not report about the stoves until we had solid facts and data at hand. This attitude was fundamental for the subsequent effectual exposure by the press. Having consolidated data at hand, a substantial quantity of stoves installed and very positive declarations from the women made all the difference. The basic idea was also not to demonstrate this unique project in just a minor presentation.

The first divulgement took place in a nationwide TV news program. The visit of the camera team was carefully planned. The day before the scheduled time, IDER's technicians prepared the course of the event, the cook stoves to be shown, the women to be interviewed and the approach for best presenting the benefits of these efficient cook stoves. Since we had previously conducted several community meetings, the population was well prepared to answer even difficult questions in a short and comprehensive manner.



Camera crews interviewing an IDER beneficiary

Our key staff accompanied the TV team in order to be ready to answer any technical, social, and economic and health related questions. The newsworthy angle was that this technology has such outstanding impacts on the families and the environment, that it should be reproduced all over northeastern Brazil. This statement was practically the cornerstone that convinced the public power to invest in this idea and finance 22,000 cook



Camera crews interviewing another IDER beneficiary

stoves through a special fund FECOP - Municipal Fund to Combat Poverty.

After this great initial exposure, it was relatively easy to access other TV channels, journals, periodicals and newspapers. Our current challenge is to keep the project visible, and have always significant news at hand, e.g. development of carbon credit funding for the stoves, which may find the interest of further financiers.

Based on these experiences, IDER offers the following suggestions to other Partners interested in capitalizing on media exposure for their projects:

The first step of a winning story is no secret: you have to have a good project. Successful interventions depend on solid, verifiable results. Much up-front dialogue creating high expectation does not help to cover up disappointments discovered later on during field visits.

Secondly, put out of your mind that the project is "your" project. It's not. A good propagation requires candidness to share this experience with everyone. This does demand the provision of easy to understand reports, folders, banners, mockups and other supportive documentation. And photos - many photos. Take a lot of photos throughout all project development phases. You never know when you may need them and they will surely help in all stages of project dissemination.

Explore a little bit the actual atmosphere of communication resources in your region and try to embed your project in their reporting. This does require rapidness, and easy access to and knowledge of key persons in order to not lose

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time talking to the wrong people.

Before conducting a field visits with journalists, make a detailed plan of the entire event and keep control of it. Furthermore, have the involved persons beforehand informed about the appointment in order to avoid misunderstandings and absence of key persons on that important day. The equipment you want to show should be in perfect working condition and in operation. A cook stove without burning wood and without food preparation in progress is not a good example of achievement.

APPROTECH ASIA Media Experiences

Feri Lumampao, Executive Director, APPROTECH ASIA: The Asian Alliance of Appropriate Technology Practitioners, Inc.; fglumampao@yahoo.com; www.approtech.org

Working with food micro-entrepreneurs (FMEs) and poor households is socially and technically challenging, especially in raising awareness on improved indoor air quality and health and introducing new, improved but not yet popular technologies such as energy-efficient cookstoves. The change agent must be innovative, skilled and conversant about the topic to be credible and to attract attention and interest among the potential partners in development.

APPROTECH ASIA's Improved Cookstove Program in the Philippines (ICS-Phils.) started a pilot project on the use of energy-efficient cookstove and hygienic, healthy foods among ambulant food vendors (AFVs) in the Metro Cities of Cebu, Davao and Manila. The project was able to closely track data on cooking fuel savings since the food



Tabo sa Banay street has 50+ street food vendors who moved from traditional charcoal cookstoves, kerosene and LPG to Mabaga cookstoves with assistance from the Commission on Women and Family Affairs in Cebu City, Philippines.

If your budget allows, contract a professional for your communication dissemination process. The cost may seem high in the moment, but will be greatly outweighed by the benefits. Participate in events, fairs, workshops, seminars, associations, and networks; whatever you think is important for the publicity of your project.

Winning coverage is the sum of all your efforts and with a great deal of dedication, your project will be a success in the media.

vendors are much more conscious of their daily expenses and income than are households. The local partner-implementing organizations include the City Health Office, Department of Education, the Philippine Commission for the Urban Poor, Integral Development Services, among others, while technical assistance was provided by the Asia Regional Cookstove Program (ARECOP), UNDP Regional Energy Programme for Poverty Reduction, and ENERGIA, among others. The results of the pilot project showed 30-70% savings on cooking energy with use of the energy-efficient stove. This situation propelled the commercialization of the *Mabaga* (Tagalog term for burning charcoal) cookstove by organizations, cooperatives, business-minded individuals and the AFVs themselves.

The pilot project increased the awareness of people in the poor communities where the AFVs are doing business, as well as among environmental advocates, on the cooking energy savings and health benefits from using the energy-efficient *Mabaga* cookstove through testimonials and informal conversations with the food vendors.

APPROTECH ASIA then expanded its pilot project on improved cookstoves to improved kitchens with food micro-entrepreneurs who produce larger volumes of specific food products that require a kitchen with a production area. Special attention was given to users of biomass fuel for cooking. FMEs have the capability and are almost always interested in investing in the improvement of their kitchens and production areas because it makes their work easier and faster. The improved institutional cookstove improved the quality of the food product and increased the volume of production and thereby daily income. Technical

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assistance was provided by the Asian Institute of Technology (AIT-Bangkok), GERES, among others.

As part of this work, APPROTECH ASIA measured CO and PM during the burning of biomass fuel in the kitchen before and after the improvement using HOBOS and UCB monitors. Reductions in CO and PM were around 85% in the improved kitchen; a significant reduction but one that nevertheless resulted in levels higher than the WHO recommended standard. Results of the data were published for dissemination and presented in several local, regional (Asia and the Pacific) workshops, conferences, study visits, and throughout the APPROTECH network, including among partners with media contacts. APPROTECH ASIA is continuously improving the technical aspects of the cookstoves to meet the WHO standard on CO and PM.

While APPROTECH ASIA hadn't initially set out to involve the media in its activities, the success of the pilot project caught the attention of the media, first through BBC World, who discovered APPROTECH ASIA while researching organizations in the Philippines working on this issue for a documentary on indoor air pollution (IAP) and pulmonary diseases among households using biomass for fuel. BBC contacted APPROTECH ASIA through a local television program, The Probe, who then also highlighted APPROTECH ASIA's activities ahead of the BBC World piece. These local and global television programs along with a daily newspaper published pieces in English

and the local language, *Tagalog*, about the effects of smoke and particulate matter from burning biomass fuel and resulting IAP on the health of women and families, especially among the food micro-entrepreneurs whose kitchen is also their commercial production area.

During the filming of the BBC documentary in August, APPROTECH ASIA coordinated with our potter who produces the cookstove and our academic partner who promotes and commercializes the cookstove, and provided technical staff to show the use of the HOBOS and UCB monitor in the kitchen in Antique, a poor province in Western Visayas. When BBC World informs us of the date of the showing of the film, PCIA will pass this on to Partners.

The article on the energy-efficient *Mabaga* cookstove project in the Daily Inquirer newspaper and the video broadcast in the Probe TV program resulted in inquiries from cooperatives, associations and business people who would like to produce and apply for dealership of the *Mabaga* cookstove, as well as from NGOs, FMEs and micro-finance institutions who want to partner with us in the kitchen improvement program.

In partnership with regional and international networks and financing institutions, APPROTECH ASIA's goal is 1M households and AFVs using *Mabaga* cookstoves in the Philippines in the next two years and for at least 1,000 FMEs to have improved their kitchen and production areas for public health and productivity. APPROTECH ASIA welcomes partners in the replication and expansion of the project in other countries through our existing networks like PCIA.

Help Us Expand the Partnership Around the Globe

The Partnership encourages all Partners to recruit colleagues, agencies and organizations into PCIA. Only with a large, vibrant membership will the Partnership reach its fullest potential. Existing and new members will benefit as new project opportunities and lessons learned are shared within the Partnership and collaborations emerge.

Joining is easy. Visit the Partnership for Clean Indoor Air Web site at www.pciaonline.org and click on "Become a Partner" to join the more than 200 member organizations from around the globe working to improve health, livelihood and quality of life through reduced indoor air pollution from household energy use.

Your comments are welcome!

This newsletter is published by Winrock International on behalf of the Partnership for Clean Indoor Air. To share comments, suggestions, news, and article contributions please email pciaonline@yahoo.com. The deadline for contributions to next quarter's Bulletin, the topic of which is Progress since the 2007 Forum, is **November 30, 2008**.

DISCLAIMER: Unless otherwise stated, information contained in this Bulletin is not necessarily the opinion of and/or endorsed by all Partners.

☀ HAPPENINGS

Recent Partner Activity...

Africa Carbon Forum PCIA Side Event

World Bank colleagues in the Carbon Finance Assist program once again secured a side event for PCIA at a recent carbon event; the Africa Carbon Forum, September 3-5, 2008 in Dakar, Senegal. The side event on September 3rd highlighted the successful efforts of PCIA and its Partners to improve health, livelihood and quality of life through reduced exposure to indoor air pollution from home cooking and heating practices, and share examples of projects that are also effectively reducing carbon emissions. The presentations by Winrock International (on behalf of PCIA) and GTZ covered PCIA efforts to promote clean fuels and technologies that reduce the environmental health risk faced by three billion people exposed to high levels of toxic pollution caused by burning biomass fuels for cooking and heating while also reducing fuel use; deforestation; desertification; gender inequity; and greenhouse gas emissions.

George Riegg of PCIA Partner Paper Recycling Skills Project (PRSP; see Partner Spotlight on p2!) brought PRSP-made cardboard/sawdust briquettes and a New Dawn Engineering-type stove to demonstrate, much to the delight of participants and other onlookers at the cocktail hour!



George Riegg of PRSP demonstrates improved stove and recycled paper and sawdust briquettes

To view and download presentations from the side event, please visit <http://www.pciaonline.org/proceedings>. For more information about the Forum please see the Forum website: <http://www.ieta.org/ieta/www/pages/index.php?IdSitePage=1560>.

World Bank discussion on PCIA and stove commercialization

On September 30, 2008, the World Bank's Energy and Poverty Thematic Group (EPTG) hosted a brown bag lunch discussion in Washington DC on the Partnership for Clean Indoor Air, and Partner activities in the markets for cleaner cooking/heating fuels and technologies. Brenda Doroski of USEPA presented on the cumulative experiences of PCIA, and Richard Grinnell of Helps International (Guatemala) and Joanne Trotter of the Aga Khan Foundation/Aga Khan Planning and Building Services (Pakistan) presented on successful business models for biomass stove commercialization.



Mass-produced improved stoves

Helps International has been working in Guatemala for over 25 years on issues of poverty reduction, health, economic development and education. HELPS manufactures, distributes and promotes cleaner cooking stoves (ONIL Plancha Stoves, Nixtamal Stoves and Institutional Stoves, in addition to Retained Heat Cookers) in Guatemala based on a commercial business model. The ONIL Plancha stove reduces wood usage by 70% and has a chimney that removes emissions from the homes. HELPS sells approximately 2,500 stoves per month, selling to local NGO's and government programs that help poor rural families, as well as directly to consumers, and has distributed 49,000 stoves to date.

The Aga Khan Foundation's Building and Construction Improvement Program was launched in 1997 to address the poor living conditions that are pervasive in the northern regions of Pakistan by conducting community-based action research, and by developing and testing locally relevant Energy Efficient and Home Improvement products. More than 60 different products have been developed, tested and refined based on significant community feedback. The variety of products available ranges from improving energy

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efficiency (such as fuel efficient stoves, water warming facilities, solar geysers, wall and roof insulations, etc.), to home and kitchen workspace improvements, to seismic resistant construction, to house planning and layout design tools. External donor funding only covers the cost of research and development of products; the manufacturing and sales component has always focused on creating and maintaining commercial sustainability.

To view and download the presentations from the event, please visit <http://www.pciaonline.org/proceedings>.

Upcoming Events...

Better Air Quality (BAQ) 2008

November 12-14, 2008, Bangkok, Thailand

The theme of BAQ 2008 will be "Air Quality and Climate Change: Scaling up win-win solutions in Asia". For more information please see <http://cleanairnet.org/caiasia/1412/article-72204.html>. PCIA is hosting a side-event on November 11, as well as sponsoring three panel sessions focused on reducing IAP from household energy use, and providing travel scholarships for multiple Partners to participate.

Carbon Markets Africa 2008

Nov 18-19, 2008, Cape Town, South Africa

The 2nd annual Carbon Markets Africa will provide a platform for businesses to learn about the latest developments for CDM in Africa. For more information please visit: http://www.greenpowerconferences.com/carbonmarkets/carbonmarkets_africa_2008.html

Beyond Firewood: exploring alternative fuels and energy technologies in humanitarian settings

December 11-12, 2008, New Delhi, India

As part of its Fuel and Firewood Initiative, the Women's Commission will be hosting the first-ever major international research conference on firewood and alternative cooking fuels and energy technologies in humanitarian settings. The conference will bring together developers,

practitioners, and users of alternative fuels, energy technologies, and physical protection strategies appropriate for use in humanitarian settings from all over the world. The aim is to share experiences and create new linkages amongst researchers and practitioners, and build an empirical basis for fuel-related interventions in humanitarian settings. In addition, the conference will link technical experts with humanitarian staff in sites and regions that are urgently in need of such interventions. For more information please visit: www.fuelnetwork.org/conference.

ETHOS 2009

January 23-25, 2009, Kirkland, Washington

This year has seen many new and exciting possibilities emerge and we are looking to give participants a down to earth summary of carbon credit funding, large scale manufacturing of stoves, new standards for cooking stoves and more! For more details and to register please visit: <http://www.vrac.iastate.edu/ethos/conference.php>.

4th Partnership for Clean Indoor Air Forum

March 23-28, 2009, Kampala, Uganda

Join the largest gathering of household energy (HHE) and health leaders as more than 200 practitioners share the latest developments in technologies, fuels, monitoring and evaluation, commercialization, carbon financing, awareness raising, and research; and make new commitments to significantly reduce exposure to indoor air pollution from cooking and heating practices. Help achieve the Millennium Development Goals to reduce child mortality, improve maternal health, eradicate poverty, promote gender equality, and ensure environmental sustainability. Be a part of this exciting global event. Please note: for those requesting financial assistance, the registration deadline is December 1, 2008. For more information and to register, please see the Forum flyer on page 13, or visit <http://www.pciaonline.org/2009ForumRegistration>.

☀ WHAT'S NEW?

... In Research

Costs and Benefits of Institutional Rocket Stoves

Institutions and agricultural companies catering to a high number of people benefit from using energy saving stoves, according to a recent cost-benefit analysis from Malawi conducted by the economist Helga Habermehl on behalf of GTZ's household energy programme HERA. The study quantified not only the benefits for the institutions but also the benefits derived from national and global impacts caused by the use of the stoves.

Compared with the investments through the Programme for Biomass Energy Conservation in Southern Africa (ProBEC) in Malawi "the promotion of efficient institutional cook stoves is favourable from an overall economic view," economist Helga Habermehl reports. Each invested dollar gives a return of US\$5.16, considering avoided fuel costs, greenhouse gas reduction and preserved forest reserves on a period of ten years and a discount rate of 3%.

The study includes institutions, such as schools, nurseries, hospitals or orphanages, and tea estates in Malawi that bought (or built) 4266 energy saving Rocket-type stoves for their canteens through ProBEC between 2004 and 2007.

ProBEC, which is implemented by the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH on behalf of the governments of Germany and the Netherlands, trained local producers in constructing the Rocket Stoves. Each stove gets a certificate of quality and a warranty. Main customers include the World Food Programme (WFP), the Scottish school feeding programme "Mary's Meals," and private schools.

Depending on the size these efficient stoves save between 60 and 80% of the firewood needed otherwise in a traditional open fire. In 2008, the installed stoves will save over 23,000 tonnes of fuelwood. Economic benefits due to fuel savings will amount to US\$661,665; savings due to preservation of forest reserves amount to US\$361,602. Furthermore, the use of the canteen stoves reduces greenhouse gas emissions: about 35,000 tonnes of CO₂ and 93 tonnes of methane

are saved, which gives an economic benefit of US\$255,874 this year. In 2008, the total economic benefits due to the use of the stoves amount to US\$1,279,141.

The use of rocket stoves is profitable for each of the individual institutions: An orphanage that prepares two meals a day in a 100 litre pot saves US\$680 yearly on firewood expenditures. If a 200 litre stove is used two times a day throughout the whole year the net benefit during the stove's 4-year life is US\$4,235. Hence, the avoided costs due to firewood savings minus the cost of the rocket stove are 15 times higher than the costs spent for the stove. Depending on cooking frequency and size, the price for a stove has been paid off after three to nine months. Due to reduced firewood costs canteens save up to 40% on their catering budget.

Thus, institutional rocket stoves not only pay off on a macro-economic level but are also improving the financial conditions of each canteen using an energy efficient stove.

"We enjoy this stove since three years. Can you see the soot on the kitchen walls? This was from the open fire when our kitchen was filled with smoke. It was hard to breathe inside the kitchen. With the modern stove we are no longer suffering from coughing and sore eyes as before. Work is much more fun! Moreover the college saves over half of its budget for firewood and can use the money to buy books and better food for the students. So the students are happy too!" - Cooks at a school in Blantyre, Malawi report.

The Cost-Benefit Analysis is available for download at:

<http://www.gtz.de/en/themen/umwelt-infrastruktur/energie/20674.htm>.

Assessment of Effectiveness of ICS in Nepal

With more than 80 percent of the population depending on solid biomass fuel for cooking, indoor air pollution is a major problem in Nepal. WHO estimates that 2.7 percent of Nepal's national burden of disease is attributed to solid fuel use and this causes 7500 deaths per year. In order address this problem, different government and non-government organizations, as well as

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private companies and international agencies have initiated various programmes and introduced a variety of technologies to reduce IAP in Nepal. One of the most simple and popular technologies to reduce IAP in rural homes has been the improved cook stoves (ICS). The mud brick ICS is being promoted by the Energy Sector Assistance Programme of the Alternative Energy Promotion Centre (AEPCC), as well as other agencies. So far more than 230,000 such stoves have been installed in the country and AEPCC/ESAP plans to install 500,000 more stoves in the second phase (2007-2012).

Realizing the need for effective monitoring and evaluation of the ICS, the Biomass Energy Programme of AEPCC/ESAP together with Environment and Public Health Organization (ENPHO) recently conducted a study to assess the effectiveness of ICS in reducing indoor air pollution and improving the health. The research carried out two major activities: (i) measurement of 24-hr mean concentrations of two principal indoor air parameters – particulate matter of size less than 2.5 micron (PM_{2.5}) and carbon monoxide (CO); and (ii) questionnaire survey and observation for both indoor air pollution and health impact assessment.

Study design

The study followed the "Before-After" design; hence both pollution measurement and questionnaires surveys were conducted twice for each household: first before the installation of ICS or with traditional cook stoves (TCS) and the second after the installation of ICS – a two pot-hole mud brick stove. The study was designed in consultation with experts from the Centre for Entrepreneurship in International Health Development (CEIHD); participation in the training "Measuring Change: Indoor Air Pollution and Household Energy Monitoring Asia Regional Workshop" organized by Partnership for Clean Indoor Air (PCIA) in Hanoi August 7-11, 2007 helped in finalizing the design. PM_{2.5} was measured using UCB particle monitors while CO was measured using HOBO CO loggers. Both types of equipment were purchased new from CEIHD and calibrated at the Indoor Air Pollution Laboratory of University of California Berkeley. Similarly, two different sets of questionnaires, one for IAP and the other for health impact assessment, were administered in both phases of study. This was followed with field observation. Data for pre-ICS installation was collected from 47

households in three different districts – Dolakha, representing high hills of Nepal, Ilam representing mid-hills and Dang in the plains. The data for post-ICS installation was collected from 39 of the same households. Parallel to this study, ENPHO, with support from Fulbright scholar Ajay Pilarsethi, also conducted a cross-sectional study in Kavre District in the mid hills. The number of households for both the studies was determined based on statistical rules and sampling techniques designed by the CEIHD for the Household Energy and Health Project (Edwards, et. al., 2007).

Key findings

Some of the major findings of the study are as follows:

-The average 24-hr mean PM_{2.5} concentration was measured to be 2.127 mg/m³ in before phase (with TCS) and that in the after phase (with ICS) was 0.728 mg/m³. The average 24-hr mean CO concentration was measured to be 22.174 ppm with the TCS and 8.349 ppm with the ICS. The average percent change of the IAP concentration between the TCS and ICS were therefore 65.73% for PM_{2.5} and 62.34% for CO. The data shows that the pollution levels in houses that use TCS are very high and the ICS that is promoted in Nepal is quite successful in reducing IAP. However the fact that the pollution levels are still higher than WHO guideline values even after installation of ICS shows that there is a need for more improvement in areas such as ventilation and kitchen management.

-By district, the highest and lowest 24-hr average mean PM_{2.5} and CO concentrations were measured in Dolakha and Ilam respectively in both 'before' and 'after' measurements. In Dolakha, the measured mean concentrations of PM_{2.5} were 3.374mg/m³ with TCS and 1.429mg/m³ with the ICS and for CO these were 38.557ppm with TCS and 17.172ppm with ICS. In Ilam, the mean PM_{2.5} and CO were respectively 0.889mg/m³ and 8.660ppm with the TCS; and 0.728mg/m³ and 3.337ppm with the ICS. The large difference in pollution levels in the two districts both before and after the installation of the ICS shows that other factors, besides the stove design, such as ventilation and cooking habits are also very important in determining IAP levels.

-According to the main cook, remarkable improvements in the health condition of both the women and young children were observed following the installation of ICS. Major health outcomes included upper respiratory infections

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such as cough, phlegm, influenza, whistling/ wheezing of the chest, headaches and eye irritation; the occurrence of these health outcomes were substantially reduced after ICS installation. Reported coughing events decreased from 55.6% to 16.7% after ICS installation in adults. In children, a similar change was reported from 96.2% to 46.2% after installation. However, as there was only a three month gap between the installation of the ICS and second phase of the assessment, the actual health impacts of ICS may not be very clear.

-The concentration levels of IAP were found to be affected by a number of factors. Major among them included ventilation condition, fuel types and condition, users' behavior, geographical and climatic condition, and to some extent, installation and use of the ICS. Some 69% of the households were reported occasional problem of smoke coming back into the kitchen.

Conclusions

Overall, the study found very high levels of indoor air pollution from burning of biomass fuels, particularly in houses with poor ventilation.

However, the simple, low-cost and locally built mud brick ICS can reduce the pollution levels as indicated by concentration of PM_{2.5} and CO by more than half. The ICS also results in significant perceived health benefits as well as other benefits such as reduced firewood consumption, cleaner kitchens, and reduced time for cooking. Overall the ICS users surveyed were satisfied with their new stoves and feel that reduced smoke, improved health and reduced firewood consumption are the main benefits of the stoves. However, there is a need for more awareness programmes for scaling up ICS throughout the country. The findings of this study can be used as a tool for motivating people to install ICS. The study also shows that proper operation and maintenance of the ICS is essential for fully achieving its desired results and other aspects such as improved ventilation and kitchen management are also equally important. AEPC/ ESAP plans to follow up on this study by monitoring the same households one year after installation of the ICS. This will provide more valuable information on operation and maintenance of the ICS and its performance over a long period.

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